Board of County Commissioners

Leon County, Florida

Workshop on Joint Dispatch and Emergency Operations Center

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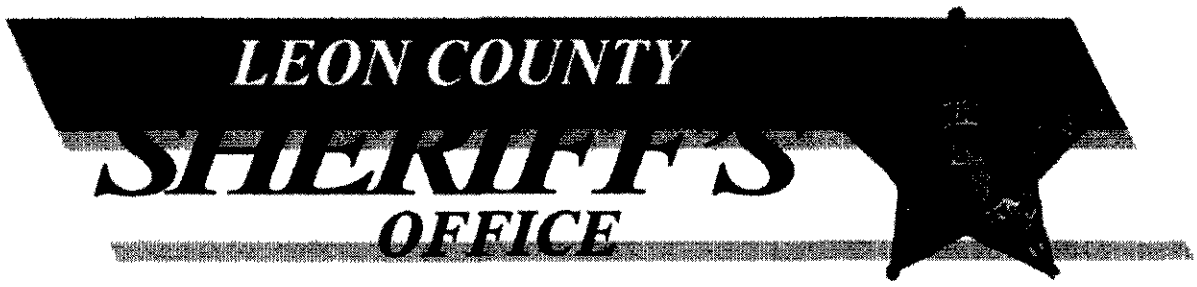

LEON COUNTY, FLORIDA

COMMUNICATIONS CONSOLIDATION FEASIBILITY STUDY

MARCH 2005

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1.0 EXECUTIVE SUMMARY

1.1 PROJECT OVERVIEW

The Leon County Sheriff's Office has embarked on a major project to address the way in which public safety communications is achieved through the dispatch process and to assess the staffing analysis in support of a consolidated or collocated public safety communications center. The goal is to improve services to the public by more efficiently handling both emergency and non-emergency calls and more effectively deploying public safety resources.

In support of the current project, the Sheriff's Office has contracted with RCC Consultants, Inc., (RCC) to review the current and projected requirements of each PSAP to determine appropriate staffing levels based on accurate call volumes, dispatch protocols and levels of service to staff and facilitate one consolidated communications center to replace multiple existing centers. RCC has analyzed the organization and operations of the Leon County Sheriff's Office communications operation and the Tallahassee Police Department's communications operation to determine what is required to staff and size a facility for one center to support dispatching operations for Leon County and the City of Tallahassee Police and Fire Departments.

1.2 REPORT SCOPE

This study presents a high-level description of operational, organizational, and logistical dispatch communications requirements for a consolidated/collocated County/City Dispatch Center and its impact to County and City residents and businesses. This report will identify potential benefits of such consolidation or collocation as well as potential drawbacks.

This report presents three alternative configurations for consolidated or collocated communications operations within Leon County, including the advantages, disadvantages, and associated fiscal impact of each viable option.

1.3 STAFFING ANALYSIS

Public safety communications centers require a high Grade of Service (GOS) to serve the public's needs to answer E9-1-1 calls and dispatch incidents. For public safety, the minimum GOS communications center design allows initial blocking (queuing) of 1% (P 0.01) of E9-1-1 calls. For this report, LCSO and TPD provided annual statistical data and RCC projected call quantities for the busy-hour. RCC then utilized Erlang-C analysis with busy-hour projections to define the minimum staffing requirements that provide a GOS of P 0.01 for each alternative. Survey data indicates that LCSO and TPD currently employ 39 and 53 personnel respectively in telecommunicator and telecommunicator supervisor positions for a total of 92 personnel. However, based on the telecommunicator availability calculation, LCSO and TPD staffing levels should be 55 and 50 personnel respectively. For the purpose of equal weighting in this staffing analysis, a quantity of 55 and 50 personnel respectively will be used for LCSO and TPD collocated staffing levels. The staffing analysis presented in Section 5.2 illustrates the following:

- No staffing or budgetary savings (staffing remains at current levels) is anticipated for the collocation alternative.
- Total telecommunicator personnel are reduced by 9.5 percent (10 people) in the partial consolidation alternative as compared to collocation.

- Total telecommunicator personnel are reduced by 19 percent (20 people) in the full consolidation alternative as compared to collocation. Additionally, it is anticipated that administrative and management personnel will be significantly reduced.

1.4 SYSTEMS CONSIDERATIONS

CAD – A **collocated** dispatch center would house separate LCSO and TPD CAD systems as they are operating now. In a **partially consolidated** configuration, common call takers would answer telephone/9-1-1 calls and enter incident information into a common "call taker" CAD system. The call taker CAD would then route the incident to the proper dispatcher and pass the incident data to that agency's CAD system via a CAD-to-CAD interface. A **fully consolidated** communications center would require the utilization of one common CAD system by all the associated agencies.

1.5 PHYSICAL FACILITIES

A collocated dispatch center houses eight LCSO and nine TPD call taker positions, five LCSO and seven TPD dispatcher positions, two LCSO and two TPD supervisor positions; it is sized to handle four LCSO and five TPD extra call taker positions, two LCSO and five TPD extra dispatcher positions for future growth.

A partially consolidated dispatch center houses 10 common call taker positions, five LCSO and seven TPD dispatcher positions and two supervisor positions; it is sized to handle three extra call taker positions, one LCSO dispatcher position, and one TPD dispatcher position for future growth.

A fully consolidated dispatch center will house 10 call takers, 10 dispatchers and two supervisors; the center will be sized to handle three extra call taker positions and three extra dispatcher positions.

For each configuration above, RCC recommends that the proposed facility also include an 80-position EOC.

1.6 ADMINISTRATIVE STRUCTURE

In a collocated arrangement, the existing administrative/management staffs would remain as they are today. Appropriate office space would be required in the collocated dispatch center to accommodate each agency's administrative/management personnel. Separate equipment, software, and policies could be utilized by the various collocated agencies.

In a partially consolidated configuration, a single management body should be established to manage the call taker operation. In Leon County's case, this could be the Division of Emergency Management since they are already responsible for the E9-1-1 system.

In a fully consolidated dispatch operation, a single responsible administrative body should be installed to manage the operation. This administrative organization would manage the dispatch center operations and be responsible to an administrative board that includes representation of all operation stakeholders.

1.7 BUDGETARY CONSIDERATIONS

The staffing budgetary considerations are discussed for each alternative in Section 5.5. Estimated annual staffing cost reductions are presented in Table 1-1 below.

Table 1-1

Annual Staffing Budgetary Impacts	
Collocated Alternative	$0
Partial Consolidation Alternative	$390,000
Full Consolidation Alternative*	$780,000 +

*Note: Additional savings of approximately $293,750 may be realized in administrative and management staffing reductions.

Estimated **CAD** system implementation costs for consolidation options are summarized below in Table 1-2:

Table 1-2 CAD Implementation Estimates

Partially Consolidated Options	
Lawrence & Assoc. Call Taker CAD	$40,700
Printrak Call Taker CAD	$94,600
Fully Consolidated Options	
Upgrade LCSO CAD (Lawrence & Assoc.)	$81,950
Upgrade TPD CAD (Printrak)	$221,100
Procure New Tier 1 CAD	$1,804,070

Table 1-3 Physical Facilities Estimates

Alternatives	Price ($)
Collocated	$9,034,215
Partially Consolidated	$8,050,805
Fully Consolidated	$ 7,649,807

1.8 RECOMMENDATIONS

RCC Consultants makes the following recommendations regarding public safety dispatch operations in Leon County:

A. **9-1-1 Dispatch operations for LCSO, TPD, TFD and EMS should be fully consolidated.** The following are arguments in support of full consolidation:

- **Improved Citizen/Officer Safety.** A fully consolidated dispatch center would better facilitate closest unit response to incidents that are independent of agency affiliation. It is anticipated that a consolidated Computer Aided Dispatch (CAD) system will recommend the nearest available unit. This will minimize response times and increase the overall efficiency of all public safety agencies within the County.

LCSO personnel reported that in the current operation, LCSO and TPD units may be dispatched to the same incident without coordination between the two dispatch facilities (each dispatch center receives a 9-1-1 call from a citizen for the same incident). This may be a waste of public safety resources and place officers in unnecessary danger. For example, a CAD system in a consolidated dispatch center would detect duplicate calls and allow the information from each caller to be combined into a single CAD incident record and facilitate an appropriate coordinated response.

In the current situation, with separate dispatch centers, 9-1-1 EMS calls may be improperly routed to TFD then transferred back to EMS because of a lack of public safety dispatch coordination. Protocol states that an incident with injuries should always be routed to EMS first. However, the current two-dispatch center configuration is vulnerable to this type of miscue.

- **Minimized 9-1-1 Call Transfers.** All 9-1-1 calls would be answered by a common group of call takers in a consolidated operation. This would eliminate transfers (and their associated life threatening delays) of 9-1-1 calls for the great majority of 9-1-1 calls in Leon County. 9-1-1 Calls for FSU, FAMU, and Capitol PD public safety agencies would continue to be transferred. The State 9-1-1 Plan (see Plan excerpt in Appendix 6) recommends against the transfer of 9-1-1 calls.

- **Cost Reductions.** Consolidation could reduce the required quantity of telecommunicator personnel by up to 19 percent as compared to current staffing levels. It is anticipated that these reductions would be made through attrition over time with no initial layoffs in personnel. Thus, saving the taxpayers over $780,000/year in telecommunicator salaries and benefits. Additionally, a reduction in communication center management personnel (half the management staff) is anticipated to further reduce personnel cost by approximately $293,750/year. Other reductions may be realized in technical support personnel but are not quantified in this report. Consolidating dispatch will also reduce facilities costs (i.e., building maintenance, emergency power equipment, etc.).

- **Common CAD Equipment.** Common CAD system equipment and software applications would simplify training and maintenance.

B. Install a Single Management Body for the Consolidated Center. The following are arguments in support of single-body management:

- Policies, salaries, and benefits would be uniform for all call takers, dispatchers, and supervisors.

- Single person/agency responsible for center performance. The Sheriff's Office indicated that they have the capability and are willing to manage a consolidated communications center. In support of that position, they provided RCC with the results of a Statewide survey conducted in December 1998 where it was noted that 33 Florida Sheriff's Offices dispatch for police departments within their counties. Sheriff's Offices from 35 counties dispatch Fire/Rescue or EMS. Additionally, Sheriff Campbell Co-Chairs the North Florida Regional Domestic Security Task Force. The Task Force leadership has determined that in an incident involving more than one county in the local area, that they will co-locate their operations at the Leon County EOC.

C. **Combine the consolidated dispatch center and an Emergency Operations Center (EOC) into a common facility.** The following are arguments in support of a combined EOC/consolidated dispatch center:

- **Coordination.** During an EOC activation, coordination between the EOC and communications center personnel are critical to emergency operations. A combined EOC/consolidated dispatch center would facilitate coordination by placing command and communications personnel in close proximity. This improves the County/City's ability to respond to major emergency.
- **Facilities.** Dispatch and EOC could share similar required facilities such as security, emergency power, redundant communications circuits, radio communications, facility survivability requirements, etc.

D. **Consolidation of the LCSO and TPD dispatch centers should be implemented as soon as possible.** The previously recommended changes in dispatch communications would immediately benefit the citizens and public safety personnel of Leon County.

Both major dispatch centers (LCSO and TPD) are in need of more modern, adequately equipped space. The existing facilities are cramped, have inadequate space for growth and do not meet modern ergonomic standards. Given the space requirements of a consolidated dispatch center with an associated EOC, RCC recommends that a new facility be constructed that meets current and foreseeable future emergency communications requirements in Leon County.

2.0 INTRODUCTION

2.1 PERSONNEL INTERVIEWS

RCC began the Consolidation project in January of 2004, with a project orientation presentation, followed by two days of data collection interviews and focus sessions. Project activity resumed in July 2004 with an additional kick-off session and additional data collection interviews. This section will summarize the data collected during that phase of the project.

Note: Some of the data presented herein was collected for the 9-1-1 CPE replacement project.

2.1.1 LCSO COMMUNICATIONS CENTER SIT-ALONG (JANUARY 20, 2004)

On January 20, 2004, RCC met in the LCSO dispatch center with Becky Gay (Dispatch Supervisor) and James (Senior Dispatcher). RCC spent time in the dispatch center to get a feel for their current operations. The following was noted:

A. All five call takers (per shift) can answer EMS calls. All call takers are EMD certified.

B. Have eight call taker positions. Only five have EMS CAD licenses.

C. Caller ID (from the admin phone system) does not transfer into CAD.

D. Currently only have one TDD phone (on the east wall).

E. Currently have single button transfer to neighboring counties.

F. Currently get many 9-1-1 calls from "unknown" State buildings (ALI display).

G. Have ALI failures in rural areas (rarely). When this happens, the call taker fills out an ALI failure form. However, they don't get any feedback when the correction is made.

H. The dispatch center gets more 7-digit calls than 9-1-1. Each received call is categorized by source: 7-digit, teletype, radio, or 9-1-1.

I. The dispatch center's biggest problem is that wireless calls are not mapped on the TMD.

J. Current TMD shape files are not up to date (1996 data).

K. Currently, the call taker shouts call supplement info to the EMS dispatcher. CAD does not alert when new call data is added to a CAD call.

L. Have call playback capability. Can't stop/rewind/FF during playback. Would like to have more control during playback. Instant playback is kept for 30 minutes unless "saved" by the call taker.

M. Would like wireless mouse operation.

2.1.2 TPD MEETING (JANUARY 21, 2004)

On January 21, 2004, RCC met at TPD with Police Department command and technical staff to discuss current dispatch operations and 9-1-1 system requirements. RCC also spent time in the dispatch center to get a feel for their current operations. *Most of the data collected during this meeting was with regards to their 9-1-1 system requirements.*

TPD dispatch currently use Printrak CAD and mapping (Advanced Tactical Mapping). They also use some functions of the 9-1-1 system map.

TPD dispatch currently has nine 9-1-1 call taker positions.

2.1.3 DATA COLLECTION MEETINGS (JULY 17, 2004)

A. The County uses two UHF channels for its MDCS infrastructure. MDC units are split between the channels. One channel fails regularly. 45-48 MDC units log onto the MDCS during the day shift.

B. The LCSO dispatch operation will have two Fire Service dispatch positions in place by 2008.

C. All 9-1-1 calls are currently logged by an ACS logging recorder (48 LCSO channels, 24 Emergency Management channels, and 96 TPD channels). Logging recorder data is saved on DVDs. LCSO DVDs are reused every 1.5 years; Emergency Management DVDs are not reused.

D. All LCSO telecommunicators are EMD trained. Currently use ProQA EMD and flip-cards. TPD call takers triage EMS calls and transfer them to EMS at LCSO.

E. The three major problems identified at LCSO Dispatch were 1.) Telecommunicator turnover, 2.) Dispatcher training, and 3.) Inadequate communication center space.

F. The optimum consolidated center site would be between LCSO HQ and the Health Department building. However, this lot is probably too small.

G. There is some vacant land space immediately south of the jail.

H. The new facility plan will be made as if the City were participating. It will be provisioned to accommodate County, City, and regional emergency management operations (including 80 EOC positions). The new facility should be at least 10,000 sq. ft.

I. The consolidations report will include three alternatives with advantages/disadvantages and cost impacts for each.

J. The State plan requires that each 9-1-1 call should be answered and dispatched by ONE person; not a call taker/dispatcher arrangement.

K. LCSO began 12-hour shifts in February 2004.

L. Next year's technology budget is done. MDCs in the cars have been budgeted at $5,000 per car. LCSO discussed going onto the City system ($250,000 per channel added), but would rather not. LCSO is satisfied with the current system's coverage, but not throughput.

LCSO did a pilot test with Dell 400 and Dell 800. They did not like the dark keyboards at night. Screen brightness was OK.

Want removable MDCs for future field functionality.

LCSO's CAD vendor is modifying the software to accept AVL information.

Expect to have 25-30 MDC units online at a time, plus off-duty details and shift changes, therefore the MDCS should support up to 45 units.

Car-to-car messaging is supported by a separate Cerulean server (separate from CAD).

2.2 DATA COLLECTION SURVEYS

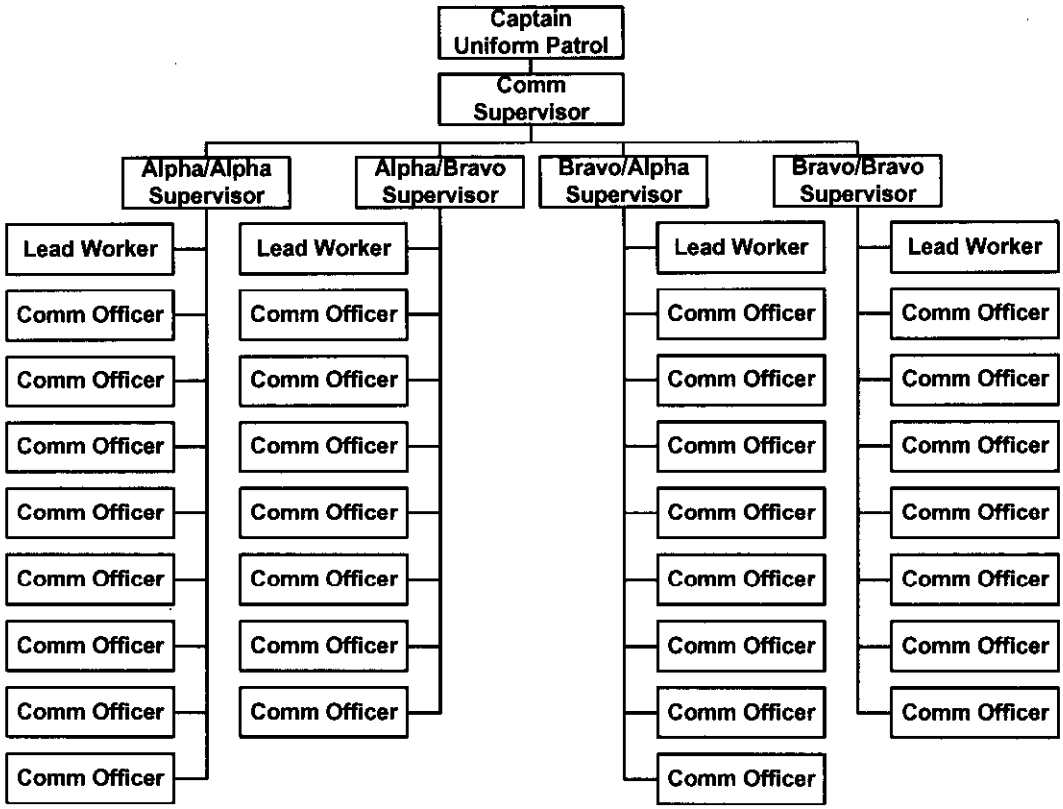
RCC customized data collection surveys for LCSO and TPD to complete. The information gathered from these surveys, interviews, sit-alongs, and telephone conversations were used in this study.

3.0 CURRENT ORGANIZATION

3.1 LEON COUNTY SHERIFF'S OFFICE COMMUNICATIONS

The LCSO Communications Department is a subsection of the Uniform Patrol Division. A tiered management structure is in use: Communications Center Supervisor, Shift Supervisor, Lead Worker, Training Officer, and Communications Officer. Table 3-1 illustrates the LCSO Communications Center organization.

Table 3-1 LCSO Communications Organization Chart



Shift Supervisors are selected from within the Communications Center from qualified applicants based on interest, years of service and experience. Applicants are selected by interview process conducted by the Communications Supervisor and the Uniform Patrol Commander. The appointment decision is the Uniform Patrol Commander's, with the Sheriff's approval.

Lead Workers are selected from within the Communications Center from qualified applicants based on interest, years of service and experience. Qualified applicants are interviewed by the Communications Center Supervisor and Uniform Patrol Commander. The appointment decision is the Uniform Patrol Commander's with the Sheriff's approval.

Communications Officers are selected from applications filed with the Leon County Sheriff's Office Personnel Department. Applications are screened by the Communications Center Supervisor, qualified applicants are processed through a background check which includes, personal reference check, past employment reference check, and criminal history check. Qualified applicants are interviewed by the Communications Center Supervisor, Shift Supervisor or Senior Communications Officer. Final

appointment decision is made based on recommendations by the Communications Center Supervisor through the chain of command, final approval is granted by the Sheriff.

Communications Officers answer admin and 9-1-1 calls and enter the incidents into CAD (law enforcement – Lawrence and Associates CAD, EMS – Zoll Data Systems RightCAD). Fire calls and calls within Tallahassee City Limits are transferred to the TPD Dispatch Center. TPD dispatches the appropriate field units (TPD or TFD).

3.2 LEON COUNTY SHERIFF'S OFFICE CAD

LCSO uses a text-based CAD system provided by a local software vendor (Lawrence and Associates, Inc.). The CAD software was custom-written for LCSO. The last system software upgrade was installed in January 2004.

Onsite and remote system maintenance is provided by Lawrence and Associates at a cost of $4,000 per month for all applications (CAD and RMS). This maintenance support includes 24/7 support and application enhancements. User-specific enhancements are implemented on an $85/hour as-needed basis.

The Lawrence and Associates CAD includes the following modules:

A. Personnel/Unit Maintenance

B. Call Taking/Dispatching

C. Complete Call History (Online)

D. Mobile Computer Interfaces

E. E9-1-1 Interfaces

F. GIS Interfaces

G. JIS Interfaces

H. Auto Theft Decal System

I. Emergency Contact Decal System

LSCO is extremely satisfied with their current CAD and RMS software applications. Although their CAD and RMS are basic text-based systems, they receive acceptable functionality and excellent system reliability, maintenance, and system enhancement support.

The EMS CAD is RightCAD by Zoll Data Systems, version 3.7.0.911 sp3.3. RightCAD was purchased in October 2003, it was last upgraded by Zoll in late 2004. Sheriff's Office IT maintains RightCAD. It provides integration with ProQA EMD software and is planned to provide billing functionality in the near future. RightCAD is not currently interfaced with an RMS.

3.3 LEON COUNTY SHERIFF'S OFFICE RMS

LCSO uses a text-based RMS system provided by the same CAD software vendor (Lawrence and Associates, Inc.). The RMS software was custom-written for LCSO. The last system software upgrade was installed in January 2004.

Onsite and remote system maintenance is provided by Lawrence and Associates at a cost of $4,000 per month for all applications (CAD and RMS). This maintenance support includes 24/7 support and

application enhancements. User-specific enhancements are implemented on an $85/hour as-needed basis.

Lawrence and Associates RMS includes the following modules:

A. Florida Statute Maintenance
B. Incident/Offense Data Form
C. Property Data Form
D. Persons Data Form
E. Vehicle Data Form
F. Illegal Document Form
G. Arrest Form
H. Officer Assaulted/Killed Form
I. Supplemental Form
J. Background Clearance Checks

Completed Records forms are delivered to Records personnel daily. The Shift Commander validates each form. The reports are divided among the Records personnel and entered into the RMS. The appropriate indexing data is provided to the Image System in order for the paper forms to be scanned into the image storage system.

3.4 TALLAHASSEE POLICE DEPARTMENT COMMUNICATIONS

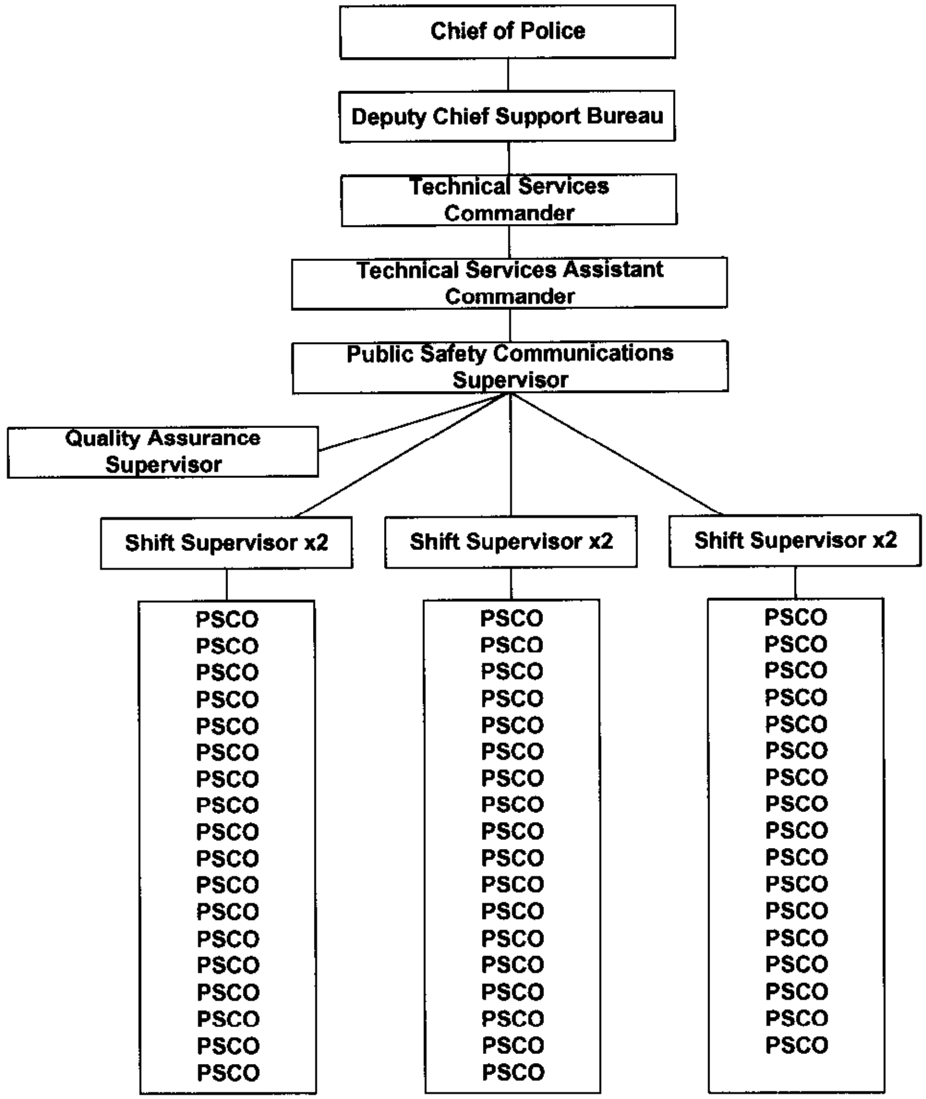
TPD Communications is a subsection of the Technical Services Division/Support Bureau. TPD Communications is responsible for receiving and dispatching law enforcement calls for TPD and TFD calls throughout the County. The Communications section consists of one Communications Supervisor, six Shift Supervisors, one Quality Assurance Supervisor, and 53 full-time Public Safety Communications Operators (PSCO).

TPD Communications Center personnel are City employees. Position advertising, recruiting, and hiring are managed by the TPD Employee Resource section in accordance with City policies.

Typical Communications Center shifts operate with a minimum of 10 PSCOs and one Shift Supervisor. Center responsibilities include answering administrative and 9-1-1 calls, dispatching TPD and TFD units, and FCIC/NCIC teletype operations. Law enforcement dispatch is accomplished via separate call taker/dispatcher configuration; Fire dispatchers answer calls and dispatch units. All PSCOs are cross-trained for call taker and dispatcher duties.

Table 3-2 illustrates the TPD Communications Center organization.

Table 3-2 TPD Communications Organization Chart



3.5 TALLAHASSEE POLICE DEPARTMENT CAD/RMS

TPD uses a Printrak CAD and Premier MDCS that were implemented in 2003. The Printrak Fire RMS is in operation and they are currently implementing a Printrak Law Enforcement RMS. HTE field reporting software is also in use.

4.0 FUTURE COMMUNICATIONS CENTER – SPECIFICATIONS & REQUIREMENTS

4.1 INTRODUCTION

Utilizing information gained during the assessment, RCC developed spatial and equipment requirements, and the estimated implementation costs for a new, Central Dispatch Center (CDC). RCC began this study by conducting a thorough review of the existing facilities and operations. The participating agencies have, up to this point, done an excellent job with the limited space available. RCC's physical review of existing facilities indicates a need for more modern, adequately equipped space in most areas. Due to limited space, many of the existing facilities are cramped, have no room for growth, and do not meet modern ergonomic standards.

The spatial and equipment requirements contained herein are based on the needs of the two primary agencies that may occupy the new CDC. These are: the Leon County Sheriff's Office (Sheriff's Office) and Tallahassee Police Department (TPD).

Spatial and equipment requirements are based on current and future staff and operational projections, as developed based on workload information provided by the two departments. Individual building spaces, (e.g.; administrative offices, conference rooms, break rooms, etc.) were developed based on planned staffing and typical operational requirements for combined dispatch facilities.

The space plan for the combined operations center also includes space accommodations for a new Emergency Operations Center (EOC). The new EOC is intended to support the entire Leon County area for response to any type of disaster or emergency.

4.2 DESIGN REQUIREMENTS

4.2.1 FACILITY DESIGN

The performance and integrity of the CDC facility are critical to the overall performance of the 9-1-1 Call Taker and Radio Dispatch operations to be conducted in the center. These requirements shall be satisfied through the design, construction, and installation of the following site and building features:

A. The CDC facility should be constructed as a "Mission Critical" building, wherein the exterior of the structure is fire retardant (i.e. concrete and steel), and resistant to tornado-like wind velocities, and adverse weather conditions.

B. The mechanical infrastructure of the facility should have no single points of failure. This facility will operate 24 hours a day, 7 days a week.

C. The facility should be designed and constructed such that it can be substantially expanded (spatially and functionally) without disruptions to the day-to-day operations of the facility.

D. The 'operations' areas of the CDC facility (computer and communication equipment rooms, dispatch and call-taking rooms, EOC, etc.) should be constructed with fire-rated interior walls, steel doors, and ramped raised floors. Any exterior windows in operation areas should be shatterproof and bulletproof.

E. The exterior grounds of the facility should provide covered and secured break and relaxation patios (separate smoking and non-smoking areas) and walking trails.

F. A section of the roof of the facility may be constructed so that receiving satellite antenna equipment, for such things as weather services, can be installed.

G. Space adjacent to the building will be required to allow for construction of an approximately 100-foot tall, self-supporting radio/microwave tower. The tower will provide for microwave communications to the primary transmitter sites of each agency and to support other antenna systems, such as amateur radio for the EOC.

H. If the site selected for the CDC facility is near an active airport, the roof of the facility should be constructed to withstand an impact from parts that might fall from an airplane.

I. Final site design should preclude unauthorized automobile access to prevent a car bomb from being placed near the facility. Closed Circuit TV (CCTV) and intercom from electronic gates to the center and remote gate controls can accommodate this.

J. Security (card access readers) should be provided for the building as well as the employee parking area. CCTV should be used to monitor site access, the parking areas, building entrances, the loading dock, and exterior grounds of the site.

The spatial requirements for the facility are based upon current and future functional and head-count projections. The initial planned space for call-taking and radio dispatch console positions was developed based on calls-for-service and dispatch incidents estimated for current peak busy hours, as provided to RCC by each department. The projected estimates were extended to accommodate future population growth.

These projections suggest a building with approximately 31,400 square feet will be required to support the functional and head-count requirements of the CDC facility. A 15% circulation factor together with a 10% building services (maintenance, janitorial, etc.) space factor were used in developing the gross square footage for the CDC building.

The final architectural and engineering plan for the dispatch center areas must allow for sufficient future growth in the number of operator consoles within the area. Initial growth space is planned in the dispatch center, as designed. Additional long-term growth has been accommodated by including within the dispatch center areas (as originally constructed) ancillary areas such as dispatch supervisor offices, conference rooms, and break rooms.

As future needs for additional consoles arise, the operations of these support areas could be relocated elsewhere in the building and then these ancillary areas would be dismantled and reconfigured for console space.

There are several large composite areas in the building, such as the dispatch center area that includes dispatch and call-taker console areas, conference rooms, a training room, a break area, and offices. Depending on building codes, large composite areas of the building may require multiple entry/egress access, which would require additional building circulation space.

With respect to expanding the building structure, consideration should be given to the location of the dispatch centers with respect to exterior walls, and the initial orientation of the structure with respect to the placement of access roads, parking areas, power generators, fuel tanks, radio/microwave towers, and other exterior elements.

4.2.2 PARKING DESIGN

The facility will require two parking areas: one for employees and one for visitors. Section 5.0 contains a compilation of parking spaces and parking lot requirements.

A. The employee parking lot should be secured with fencing, CCTV surveillance and card access readers.

B. The number of parking spaces allocated for the call taker, dispatch and administrative personnel is equal to twice the number of required spaces for this personnel. This was done to accommodate a worse case personnel headcount shift change.

C. Visitor parking must provide sufficient space for visitors, guests, and EOC personnel. RCC has estimated visitor parking based on functions within the facility. Since an activated EOC requires approximately 80 parking spaces, non-EOC visitor parking requirements will be satisfied within the required EOC activation parking spaces. The 80 spaces include EOC operations personnel, and media parking.

4.2.3 SITE DESIGN

The site to be selected for the CDC will be influenced by a number of factors. The site should provide securable access, multiple access routes to major thoroughfares, redundant electrical power and communication (telephone) services, adequate radio and microwave transmission capabilities, and be resistant to flood waters. Consideration should be given to providing a reserve potable water supply on this site as a backup water resource.

The size of the site required for the facility is based primarily on the size of the CDC building, parking capacity requirements, green area requirements, and site easements.

4.3 DISPATCH CENTER REQUIREMENTS

4.3.1 DISPATCH CENTER PLAN

Section 5.0 presents different alternatives to be considered for call-taking and dispatch operation center in the CDC facility. The design envisions that positions will be equipped to either take calls or dispatch. In addition to call-taker and radio dispatch consoles, the center will contain the following:

A. One training room

B. One large break room

C. Two shower/locker rooms (men's and women's)

D. One executive conference room

E. One small conference room

F. Management offices, number depending on alternative considered

G. A "copy and file" room

H. One or two Supervisor's Office depending on the alternative considered

Associated with the call-taking and dispatch operations center is one equipment room containing the following systems:

A. E9-1-1 equipment and Administrative telephone system

B. Microwave system equipment

C. Radio communications equipment

D. Mobile Data Terminal system equipment

E. CAD servers and LAN/WAN equipment, with space for RMS

F. Power conditioning equipment (UPS)

G. Fire suppression equipment

The requirements specified here apply to both the call-taking and dispatch areas, and their associated equipment rooms.

4.3.2 STRUCTURAL REQUIREMENTS

The following structural requirements apply to interior walls, doors, and ceilings:

A. Peripheral walls are to be full height, slab floor to slab ceiling.

B. Wall coverings should not contain tin or other metallic oxides that reduce radio coverage in the facility, and should be constructed to absorb sound (minimum 0.70 NRC).

C. Modular walls may be utilized within rooms to cordon off sections. These walls should extend from the raised floor to the acoustical ceiling and should be moveable. Conduits, piping, and cables shall not be placed in these modular walls.

D. Signs shall be located on walls that identify:

- Annunciation panels
- Emergency switches
- Fire extinguishers
- Electrical panels

E. Ceiling tile should be dust and moisture proof and shall be installed to prevent falling tile in case of a disaster or discharge of the fire suppression system. In addition, it should have a high sound absorption rating (minimum 0.70 NRC).

F. Ceilings in dispatch rooms should have a minimum height (raised floor to acoustical ceiling) of 12 feet. This is to aid in sound dissipation within the dispatch rooms and allow for suspended, non-glare lighting fixtures.

G. All expansion joints in the ceiling, floor, and walls should be watertight, waterproofed, flashed, and sealed.

The following structural requirements apply to floors:

A. Concrete slabs shall be sealed with a polyvinyl sealer, at least 3 mils thick.

B. Concrete slab to be constructed and reinforced for 3,000 lbs. per square foot load under UPS equipment cabinets.

C. At a minimum, a 6-inch raised floor structure will be required in the dispatch centers and adjacent equipment rooms. Handrails must be installed along ramped floor areas. Final design considerations may include a 12-inch raised floor with under-floor cable trays.

D. Where raised flooring is installed it should:

- Be electrically grounded to the site reference ground.
- Be secured to the perimeter walls and any interior walls that break the continuity of the raised floor system.

- Sustain a load of 150 pounds per square foot.
- Provide sufficient space for equipment maintenance.
- Be covered in static-conducting carpet for sound absorption and static elimination in the dispatch areas.
- The static-conducting carpet system is to be grounded to the raised floor structure.

E. All raised floor panel cutouts must have the edges lined (grommets) to prevent any cable damage and to prevent equipment from rolling into the cutout opening.

F. During construction, after the installation of raised flooring systems, and before the installation of any cabling systems and equipment, the under-raised floor areas should be "super cleaned" removing all construction and installation material remnants.

The following are miscellaneous structural requirements:

A. No foam, plastic, or rubber insulation anywhere in the dispatch centers or equipment rooms.

B. All metal structures that are fused or welded together must be compatible (steel to steel, copper to copper, etc.).

C. No warehousing storage for unrelated items in the dispatch centers should be allowed.

4.3.3 ELECTRICAL SYSTEMS

The following requirements apply to electrical power distribution:

A. Emergency power generators will be in-line with the building service.

B. RCC recommends a single UPS with sufficient load capacity (13 - 20 minutes) and dual emergency generators. Long-term maintenance of dual generators will be less costly than battery replacement in a dual UPS configuration. In addition, building space is conserved. Dual generators also comply with NFPA 1221 recommendations. The UPS must be equipped with a Maintenance Bypass system.

C. Emergency "Power-Off" switches with appropriate signage should be installed at each exit from both the UPS room and the dispatch area.

D. An electronic signal reference ground should be installed and bonded to the buried ground system at the radio tower.

- All computer and communication equipment shall have a common site-reference ground.
- Each system shall have its own system ground and be connected to the common site reference ground point by an appropriately sized cable.

The following electrical requirements apply to lighting:

A. Intensity controlled task lighting should be provided at each console furniture position in the dispatch center. Controls should be conveniently located for the dispatcher and free of radio frequency interference.

B. Minimally fluorescent lighting fitted with baffles and parabolic reflectors as well as task lighting shall be installed to provide lighting to meet operational needs. Preferably, suspended

lighting fixtures, which direct fluorescent light upward to be reflected off the ceiling, shall be utilized.

C. Zoned lighting should be provided so that reasonable lighting exists if a single circuit fails. In addition, some dimming of light intensity can be accommodated when appropriate.

D. Emergency lighting should be strategically located to enable continued operation in the event of a general power failure. Emergency lighting should not be limited to providing egress from the area, but should provide sufficient lighting for the orderly shut down of equipment, if necessary.

The following are general dispatch center electrical requirements:

A. Each console furniture position in the center shall be served by its own individual circuit breaker.

B. Each console furniture position in the center shall be equipped with two (2) quad outlet boxes. The first shall be connected to the UPS breaker panel and used to support console electronics (radio, CAD, etc.). The second shall be connected to general commercial power and used to support furniture power lift motors, task lighting, heaters, environmental controls, and other such devices.

C. Electrical service to the console furniture positions shall be run in metal conduit per NEC, and then to the operator positions. The final six (6) feet of power distribution conduit and associated quad outlet box shall be installed in flexible metal conduit to allow for ease of movement of the outlet box to accommodate various console positions.

D. The electrical consultant on the project must supply "Single Line" drawings of the proposed dispatch center electrical system.

E. Optimal cable lengths should be installed to prevent bunching or snarling.

F. All power panels, switches, and cables must be labeled.

G. Cables are to be labeled at both ends.

H. All cable conduits are to be tagged to indicate the cables they contain and termination points.

I. All electrical cable must meet NEC requirements.

J. The installation of a "Lightning Protection" system should be incorporated for the entire building.

K. Lightning Protection grounding should be provided for all external security cameras and camera control systems.

L. Electrical cables must not be installed in voice and data communication cable conduits.

M. Electrical system harmonics should be minimized.

N. RFI interference produced by building electrical systems and transformers must be investigated by the project electrical consultant. RFI shielding may be required to protect the integrity of voice and data cable plants.

O. Dimmer switches should not be used in equipment rooms.

4.3.4 HEATING, VENTILATING AND AIR CONDITIONING (HVAC)

A. Independent HVAC systems should be provided for the communications center and administrative office areas within the facility to allow for zoning of air handling required to support shift operations. Air handlers for the communication center should be isolated from the center to prevent the infiltration of low frequency noise (rumble) into the call-taker and dispatch areas, and thus precluding the threat of water leakage. Chilled water will be required for these systems. The emergency electrical power plan for the building should address these "stand alone", air-handling units. Depending on the method for returning air-to-air handling units, if possible, the air in these rooms should be filtered.

B. The air handling system should be designed to maintain a temperature of 72 degrees Fahrenheit (plus or minus two (2) degrees), and 50% relative humidity (plus or minus five percent (5%)).

C. The HVAC system requirements for dispatch centers and equipment rooms include:

- Shall be independent of central building HVAC systems.
- Units should be modular for backup and ease of maintenance.
- Air flow should be regulated and directed through baffles and moveable panels in the dispatch centers and equipment room ceilings.
- A positive air pressure shall be maintained.
- External air ducts should not enter the dispatch centers and equipment rooms.
- Critical spare parts should be stored on-site.

D. Monitoring of atmospheric conditions can be provided via the Central Building Management System.

E. Piping shall be insulated to prevent any condensation drip.

F. Floor drains with water-seal traps shall be installed under raised floor areas.

G. Other than chilled water lines for the HVAC, where required, and water lines for the fire suppression equipment, there shall be no intrusion of building water or drain lines into the dispatch centers and equipment rooms.

H. A water detection system shall be installed under the raised flooring.

I. Monitoring of under-floor water conditions can be provided via the Central Building Management System.

4.3.5 FIRE DETECTION / SUPPRESSION SYSTEMS

The dispatch center areas require a fire suppression system. The primary strategy for fire suppression shall be a matrixed ionization detection system and a pre-action/dry pipe, water-based sprinkler system.

A. The following detection systems, at a minimum, should be utilized in sufficient quantities to meet these general detection requirements:

- Smoke detectors shall be used to monitor the presence of smoke. These units shall serve as a pre-alarm only and do not activate the suppression systems.

- Cross Zone Ionization detectors shall be installed to sense combustion (visible or invisible). Their response time should be no more than thirty (30) seconds after sensing an initial alarm condition, and act as a second pre-alarm or as a triggering device. Each unit should have a built-in light that identifies the unit in operation during an alarm.
- In equipment areas, audible and visual alarms shall be activated when the detection system is in pre-alarm mode.
- In the dispatch center, only visual alarms shall be activated when the detection system is in pre-alarm mode.
- Alarms shall be monitored by the Building Management System.

B. The suppression activation system includes the following requirements:

- Zoned to conform to detection locations.
- Automatically activated by zone within sixty (60) seconds of the alarm.
- Manual activation and abort devices shall be strategically located within the dispatch centers.

C. The following suppression systems should be utilized in sufficient quantities to assure conformance to requirements:

- Fire Extinguishers should be placed at strategic locations so that personnel can react to visually sighted problems before the primary system is activated. Fire extinguishers should be:
  - Wall mounted CO2 hand-held units.
  - Affixed extinguisher operating instructions.
  - Located appropriately for ease of access.
- A pre-action, dry pipe, water-based system will be utilized. This system must not trigger the main water control values unless the following conditions have occurred:
  - Ionization detectors in two zones have alarmed.
  - The sprinkler head has opened and the system has depressurized due to heat over 165 degrees.
  - After one minute under the above conditions, the pre-action system should be released automatically in the area of the detected condition.
- An emergency power down sequence should commence simultaneously with the discharge of water from a sprinkler head.
- A sprinkler system override switch is to be provided at each exit from the dispatch center and at the Building Management System control area.

4.3.6 DISPATCH CENTER CLEANING SYSTEM

The dispatch room and Emergency Operations Center should be equipped with a central vacuum cleaner system to allow those areas of the center to be cleaned without the noise that accompanies a hand-operated vacuum cleaner.

The exhaust system from the vacuum cleaner must be designed to expel collected debris into a container on the outside of the building or into removable collection containers within the building, but not located in the dispatch area.

5.0 ALTERNATIVES

5.1 ADMINISTRATIVE STRUCTURE

5.1.1 COLLOCATION

In a collocated arrangement, the existing administrative/management staffs would remain as they are today. Appropriate office space would be required in the collocated dispatch center to accommodate each agency's administrative/management personnel. Separate equipment, software, and policies could be utilized by the various collocated agencies.

5.1.2 PARTIALLY CONSOLIDATED

In a partially consolidated configuration, a single management body should be established to manage the call taker operation. In Leon County's case, this could be the Division of Emergency Management since they are already responsible for the E9-1-1 system. Call taker system equipment, maintenance, and operations would common. All call takers would be uniformly trained.

5.1.3 CONSOLIDATED OPERATION

In a fully consolidated dispatch operation, a single responsible administrative body should be installed to manage the operation. This administrative organization would manage the dispatch center operations and be responsible to an administrative board that includes representation from the operation stakeholders.

The Sheriff's Office has suggested an administrative structure similar to that managing the existing Leon County 800 MHz and E9-1-1 systems. Those administrative structures are illustrated below.

Figure 5-1 800 MHz System Administrative Structure

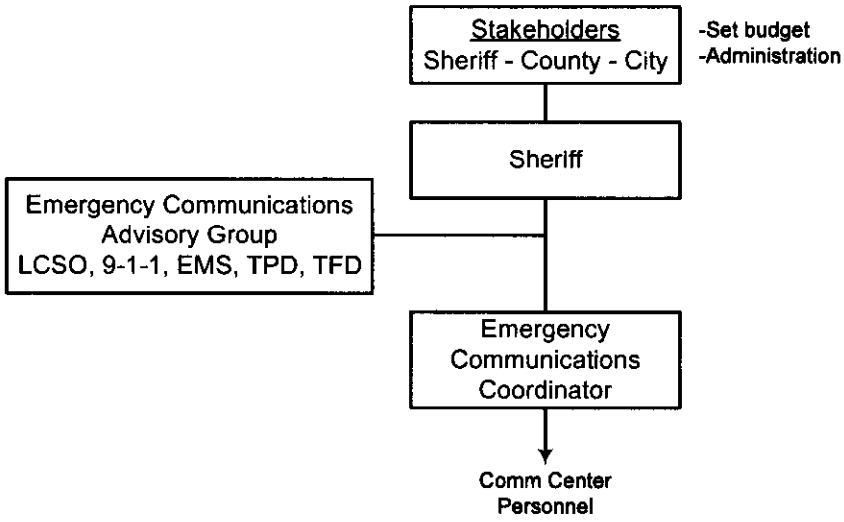
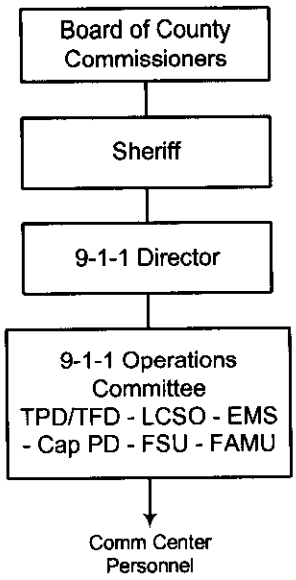


Figure 5-2 E9-1-1 Administrative Structure



LCSO has stated the following reasons for the Sheriff to manage the consolidated dispatch operation:

A. The Sheriff is elected by and is responsible to the citizens of Leon County.

B. The Sheriff is the chief law enforcement officer of the County, as required by the Florida Constitution.

C. Sheriff Campbell Co-Chairs the North Florida Regional Domestic Security Task Force. The Task Force leadership has determined that in an incident involving more than one county in the local area, that they will co-locate their operations at the Leon County EOC. The State Regional Domestic Security Task Force responsibility diagram is provide in Appendix 7

D. Consolidated dispatch centers throughout Florida are managed by county sheriffs. According to a 1998 survey, 9-1-1 systems were administered and under the authority of the sheriff in 38 of 67 Florida counties. Organizational charts for Alachua County Sheriff's Office Communications Division and Sarasota County Sheriff's Office Public Safety Communications are presented in Appendices 8 and 9.

5.2 STAFFING ANALYSIS

In the eyes of the citizen, the efficiency of public safety agencies is often measured by their timely response and the rapid conclusion the agency brings to reported incidents. Response to incoming calls in the emergency communications center and how they are processed often determines the timeliness of the response to calls for assistance, and sometimes whether or not the outcome is successful. Delays in the processing of emergency calls for service can often lead to criticism, especially in those incidents that have a propensity for being high public profile incidents.

In order to develop an understanding of the requirements for the collocated, partially consolidated and consolidated dispatch center alternatives presented in this report, RCC conducted interviews with County EMS, and LCSO personnel. All TPD/TFD call data and staffing data was requested and gathered through information requests to the LCSO. All agencies were asked to provide data that identified their current level of annual E9-1-1 call and CAD incident data, staffing levels, and salary

and benefits information. Where data was requested but not made available to RCC, estimates were inserted (and referenced). RCC then projected the annual E9-1-1 calls and CAD incidents for the three alternatives described in this report.

Table 5-1 illustrates the average number of hours an individual communications officer is available for duty and indicates that it requires approximately five people to staff each full-time position in a communications center on a 24/7 basis. It should be noted that the estimated communications center personnel availability time was provided by the LCSO (average data) and the purposes of this report is assumed to be representative of communications personnel from all agencies.

Table 5-1

Communications Center Personnel Availability	**Hrs/Person**
Annual Hours Available for Duty	**2,080**
Annual Hours Taken for Holidays	72
Average Annual Hours Taken for Vacation	109
Average Annual Hours Taken for Sick Leave	81
Average Annual Hours Taken for Training	29
Total Annual Hours Available	**1,789**

Table 5-2 illustrates the total number of E9-1-1 calls and CAD dispatched incidents by agency. A small percentage of calls are transferred between LCSO/EMS and TPD/TFD dispatch centers which results in the double counting of transferred calls. E9-1-1 calls are also transferred to FSU, FAMU and Capital Police from the two primary PSAPs. However, for the purposes of this study, the impact on staffing is considered negligible in its effect on the partially consolidated and consolidated alternatives presented in this report.

Table 5-2

E9-1-1 Call and CAD Incident Dispatch Quantities	**Annually**
LCSO/EMS E9-1-1 Calls (2004 Call Data)	33,668
LCSO/EMS Dispatched Incidents (2004 Data)	235,000
TPD/TFD E9-1-1 Calls (2004 Call Data)	114,077
TPD/TFD Dispatched Incidents (1998 Survey)	221,592

Public safety communications centers require a high Grade of Service (GOS) to serve the public's needs to answer E9-1-1 calls and dispatch incidents. For public safety, the minimum GOS communications center design allows initial blocking (queuing) of 1% (P 0.01) of E9-1-1 calls. For this report, LCSO and TPD provided annual statistical data and RCC projected call quantities for the busy-hour. For the purposes of this staffing analysis, the following assumptions were made:

- The call and incident quantities above include all calls/incidents that call takers and dispatchers handle.
- The average call length for all calls is two minutes.

- Calls and CAD incidents were averaged over the entire year and the busy-hour traffic is equal to 15 percent (or 3.6 times the average hour) of an entire days worth of traffic.
- Each CAD incident requires six radio transmissions with an average length of six seconds each.
- The resulting quantity of call takers and dispatchers will be sufficient to accommodate busy-hour traffic.

RCC then utilized Erlang-C analysis with busy hour projections to define the minimum staffing requirements that provide a GOS of P 0.01 for each alternative.

5.2.1 COLLOCATED STAFFING REQUIREMENTS

The collocated alternative provides a common facility for public safety agencies to accept and dispatch calls. Each agency would employ and manage its own call takers and dispatchers. Table 5-3 and Table 5-4 below provide current staffing levels for call takers and dispatchers required by the LCSO and TPD E9-1-1 Communications Centers. Cost savings for this alternative, if any, will be realized from use of a shared facility. In a collocated communications center alternative, staffing levels for each agency will remain the same.

Table 5-3

LCSO E9-1-1 Center Staffing	Call Takers	Dispatchers	Supervisors
1st Shift	6	4	1
2nd Shift	6	4	1
3rd Shift	6	3	1

Table 5-4

TPD E9-1-1 Center Staffing	Call Takers	Dispatchers	Supervisors
1st Shift	4	5	1
2nd Shift	4	5	1
3rd Shift	3	5	1

Survey data indicates that LCSO and TPD currently employ 39 and 53 personnel respectively in telecommunicator and telecommunicator supervisor positions for a total of 92 personnel. However, based on the telecommunicator availability calculation above, LCSO and TPD staffing levels should be 55 and 50 personnel respectively. For the purpose of equal weighting in this staffing analysis, a quantity of 55 and 50 personnel respectively will be used for LCSO and TPD collocated staffing levels. The collocation alternative is not anticipated to reduce current telecommunicator and telecommunicator supervisor staffing levels.

5.2.2 PARTIALLY CONSOLIDATED STAFFING REQUIREMENTS

The partially consolidated alternative provides for shared group of call taking personnel that transfer calls to the responsible agency for dispatching. Each agency would employ and manage its own dispatchers with call takers answering to either independent center management or one of the participating agencies. Table 5-5 below provides the projected staffing levels for call takers (from annual call data) in conjunction with actual dispatch personnel staffing quantities utilized to staff the LCSO and TDP E9-1-1 Communications Centers. For comparison purposes, the partially consolidated call taker quantities should be compared to the sum of the call takers (by shift) required in the

collocated alternative. This alternative is projected to reduce the total number of required call takers from 10 to 7 positions. Cost savings realized from this alternative would include a shared facility and a reduced number of telecommunicator personnel.

Table 5-5

Partially Consolidated Staffing	Call Takers	LCSO Dispatchers	TPD Dispatchers	LCSO Supervisors	TPD Supervisors	Call Taker Supervisors
1st Shift	7	4	5	1	1	1
2nd Shift	7	4	5	1	1	1
3rd Shift	7	3	5	1	1	1

It is anticipated that a partially consolidated communications center would employ 95 telecommunicator and telecommunicator supervisory personnel (19 positions).

5.2.3 CONSOLIDATED STAFFING REQUIREMENTS

The consolidated alternative provides for call taking and dispatching functions for LCSO, EMS, TPD and TFD by an independent dispatching agency. This consortium would manage its operations independently and most likely receive direction from a board made up of the participating agencies. Table 5-6 below provides the projected (from annual call data) staffing levels for call takers and dispatchers required to staff a consolidated E9-1-1 communications center. For comparison purposes, the consolidated call taker and dispatcher quantities should be compared to the sum of the call takers and dispatchers (by shift) required in the collocated alternative. This alternative is projected to reduce the total number of required call takers from 10 to 7 positions and the total number of dispatchers from 9 to 8. Cost savings realized from this alternative would include a shared facility and a reduced number of call telecommunicator, administrative and management personnel.

Table 5-6

Consolidated E9-1-1 Center Staffing	Call Takers	Dispatchers	Supervisors
1st Shift	7	8	2
2nd Shift	7	8	2
3rd Shift	7	8	2

It is anticipated that a consolidated communications center would employ 85 telecommunicator and telecommunicator supervisor personnel. Additional personnel reductions will be realized in administrative and management personnel.

5.3 PHYSICAL FACILITIES

5.3.1 SPATIAL DESCRIPTIONS OF COMMON AREAS

For the purpose of clarity, a discussion of key functional areas is provided below:

Break Rooms - There is one large (24-occupant) break room. The large break room has been sized to accommodate EOC operations. The break room has been scheduled for a full set of kitchen appliances.

Conference Rooms - There are two executive (12 occupant and 34 occupant) conference rooms in the facility. Teleconferencing and audiovisual (AV) equipment should be installed in the executive conference rooms. No cost has been budgeted for AV equipment in the conference rooms, as the requirements have not yet been defined.

The EOC executive conference rooms should be equipped with sufficient LAN and telephone outlets (approximately 12-15) and cabling to the CAD hardware equipment room (to connect Status or AVL Monitors). Either of the executive conference rooms may also be used as a briefing room for personnel prior to start of shift.

The telephone and LAN cable outlets in the EOC support area should be strategically located in recessed floor electrical boxes (not in wall outlets). This will permit the use of phones and computers at workstations without cables extending from wall outlets. The final architectural design of this large conference room should reflect the location of these floor outlets.

In addition, there is a small conference room provided within the dispatch center. This room may be used for smaller group meetings or meetings of dispatch center personnel.

Copy and File Room - There are two copy/file rooms in the dispatch and operations area and the EOC area. This room is designed to contain a heavy-duty copier, a fax machine, document assembly area, office supplies, and file cabinets.

EOC Command/Operations Room - This is the central command and control point for managing emergency operations. The room should accommodate at least eighty (80) persons using phones, radios and PC's. The workstations should be arranged in u-shaped conference style, with large projection screens for AVL display, CAD Status and commercial TV (for news and weather broadcasts) on both sides of the room for ease of visual access. A budget for these video displays and associated TV antenna system has not been developed, but it is recommended to use long life bulbs for the projectors.

The front wall should provide write-on surfaces and areas to mount maps and charts. The EOC area should have at least a six-inch raised floor system, allowing for flexibility regarding the use of communications, computing equipment, and cabling to the CAD hardware equipment room. The room should be equipped with a variable lighting control system.

EOC Dormitory - This is a sleeping accommodation for up to sixteen EOC personnel in each room. There are two dormitories to be provided in the facility (men's and women's).

EOC Storage Room - Storage for EOC activation equipment and stackable chairs for meetings to be held in the EOC room.

EOC Support Work Areas – There are four support areas in the EOC used by support personnel.

EOC Media Room – This room has limited access to the EOC and is intended to be used by media personnel.

Equipment Rooms – There are two equipment rooms that contain 9-1-1, administrative telephone, CAD, AVL, Radio, Microwave, EOC and MDT equipment.

Equipment Repair and Maintenance Room - This area will be used for 9-1-1, telephone, CAD, AVL, and MDT equipment maintenance. Work surfaces in this area should be 40 inches from the floor.

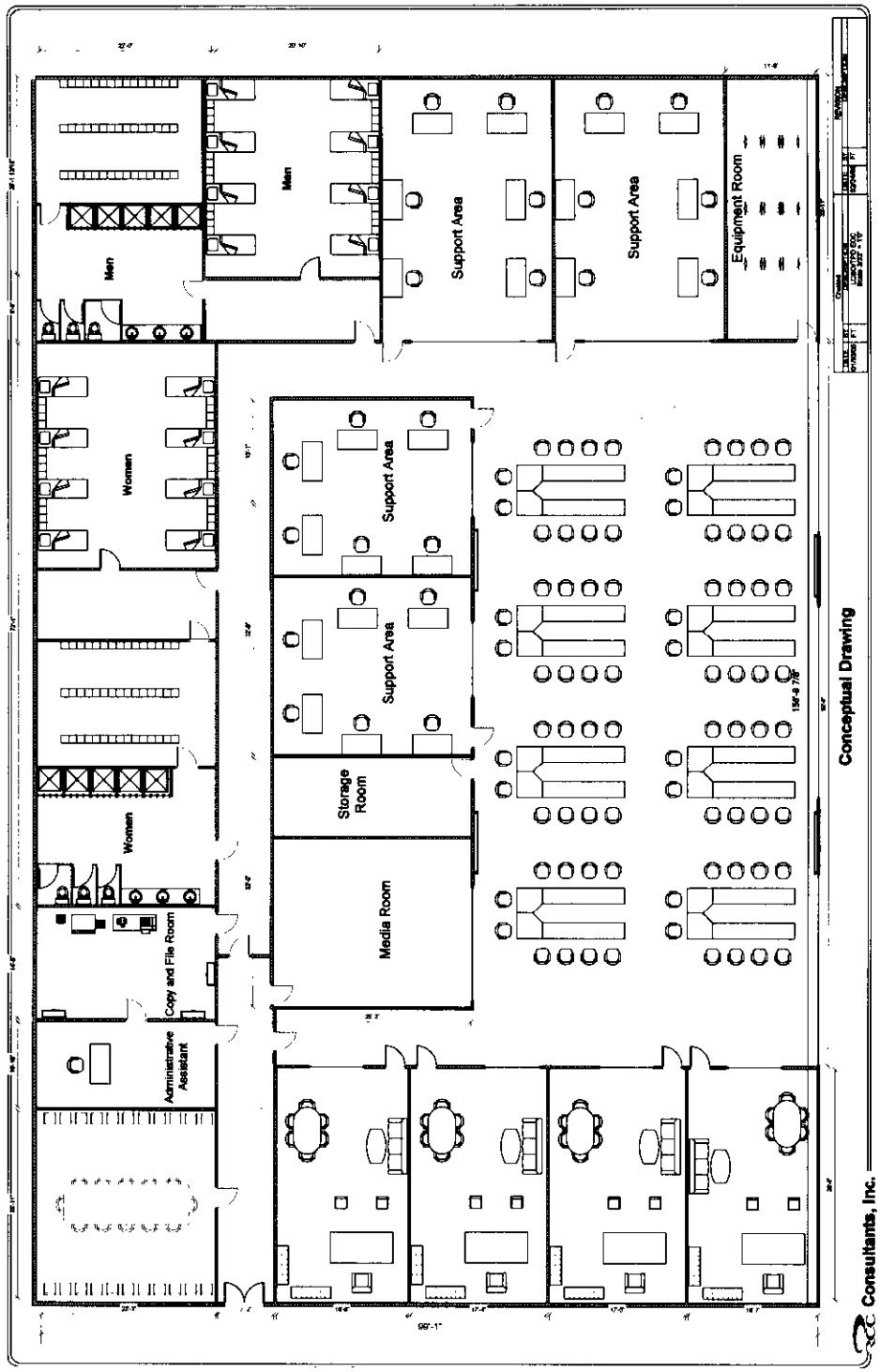
Lockers and Showers – There are two rooms (men's and women's), in the dispatch center, each equipped with five showers, 124 full-size lockers. Final locker and space allocation for men's and women's lockers will be determined during final design.

There are two rooms (men's and women's), in the EOC, each equipped with five showers, 45 full-size lockers. Final locker and space allocation for men's and women's lockers will be determined during final design.

Training Room - This shared room, which is located inside the dispatch and operations center contains nine consoles and equipment used in the training of dispatchers and call-takers. The consoles in this room can be used as substitutes for consoles "out-of-service" for maintenance, and as an overflow area for high call-volume periods.

5.3.2 EOC CONCEPTUAL LAYOUT

Figure 5-3 EOC Conceptual Drawing



5.3.3 COLLOCATION

5.3.3.1 FACILITY SUMMARY

The spatial and equipment requirements for the CDC facility are based upon current and future operational and head-count projections. The projections were developed based on workload information provided to RCC by the user agencies. These projections have been compiled into a facility plan and design that suggests the following:

A. A building with approximately 37,824 square feet will be required to support the functional and head-count requirements of the CDC facility.

B. A parking lot with approximately 61,272 square feet will be required to support the functional and head-count requirements of the CDC facility.

C. The estimated cost of the building structure, the parking lot and dispatch console furniture is approximately $9,274,215 million dollars.

Dispatch and Operations Center

Initial current needs indicate the requirement for 13 LCSO positions, eight call takers, four dispatchers and one supervisor, and 17 TPD positions, nine call takers, seven dispatchers and one supervisor. The dispatch center has been designed for future growth to support 20 LCSO positions: 12 call taker positions, six dispatch positions, plus two Shift Supervisor positions, and 28 TPD positions: 14 call taker positions, 12 dispatch positions, plus two Shift Supervisor positions.

The Dispatch and Operations Center area should have at least a six-inch raised floor system, allowing for flexibility regarding the use of communications, computing equipment, and cabling to the CAD hardware equipment room. The room should be equipped with a variable lighting control system.

There is also a break room, a copy/file room, two supervisor's offices, one for LCSO and one for TPD, and a shared dispatcher/call-taker training room with nine fully-equipped positions in the dispatch and operations center. In addition, teleconferencing and audiovisual (AV) equipment should be installed in the training room.

Space Summary

Table 5-7 provides a summary of the space allocated for Dispatch for the EOC and for Operations Management.

Table 5-7 Space Summary

Department	Space
Dispatch	13,007
EOC	12,466
Operations Management	4,786
Total	30,259
Building Circulation 15%	4,539
Building Services Space 10%	3,026
Gross Building Space	37,824

Parking Lot

Section 4.2.2 describes the criteria used to design the parking lot. This alternative has 48 total positions, 26 call takers, 18 dispatchers and four supervisor positions to be considered.

Table 5-8 represents the required number of parking spaces for this alternative.

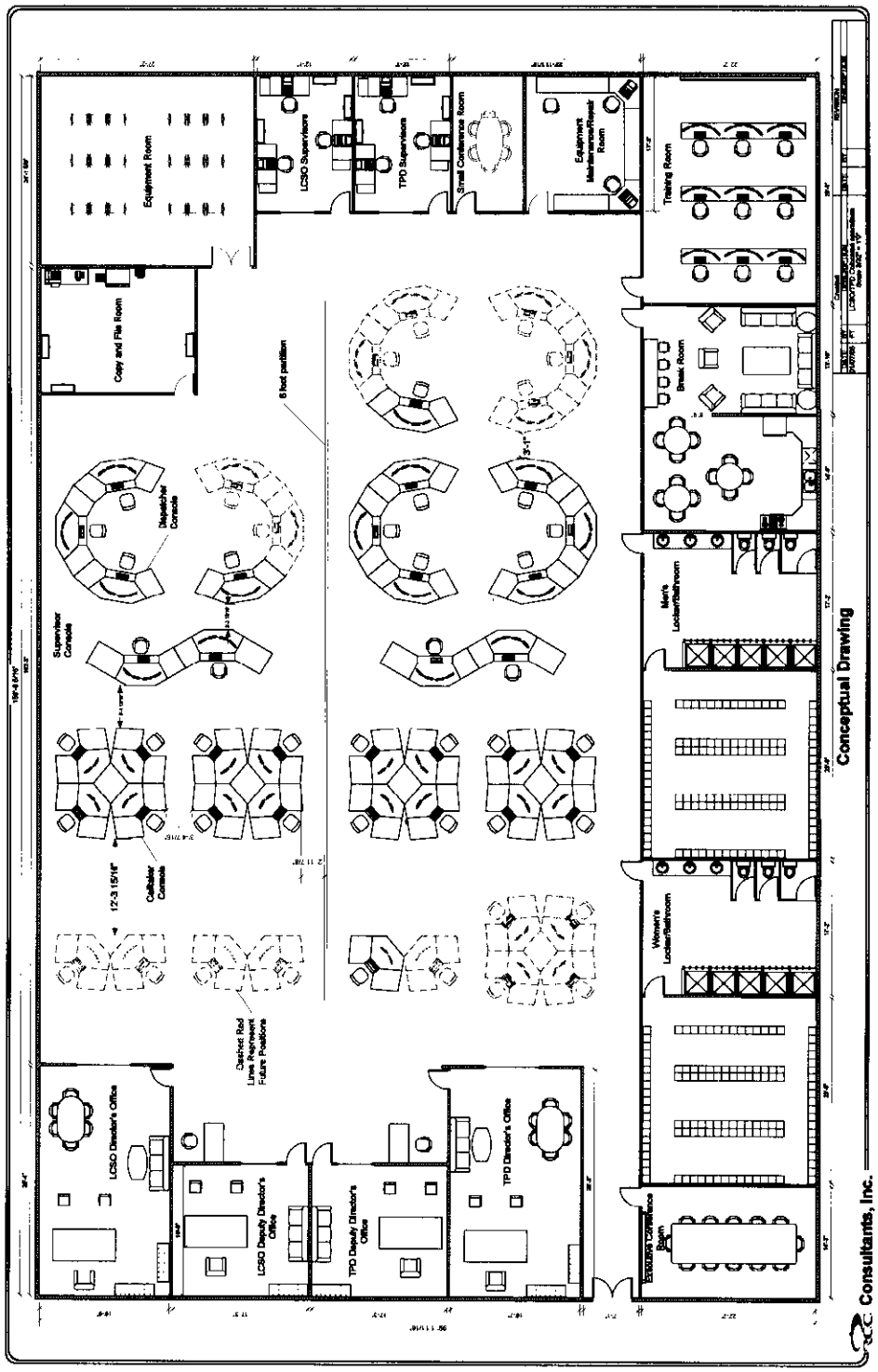
Table 5-8 Parking Lot Summary

Description	Number of Employees	Parking Spaces Required	Space (Sq. Ft.)
Dispatch Shift Positions	48	96	25,920
Management	8	8	2,160
EOC	80	80	21,600
Miscellaneous		4	1,080
Total Vehicles		188	50,760
ADA Vehicle Spaces		6	2,520
Parking Spaces		194	53,280
Parking Circulation 15%			7,992
Parking Lot space			61,272

Standard parking space size is 270 sq. ft.
ADA parking space size is 420 sq. ft.

5.3.3.2 FACILITY PHYSICAL LAYOUT

Figure 5-4 Conceptual Drawing for Collocated Operations



5.3.4 PARTIALLY CONSOLIDATED

5.3.4.1 FACILITY SUMMARY

The spatial and equipment requirements for the CDC facility are based on the staffing analysis presented in section 5.2. The projections were developed based on workload information provided to RCC by the user agencies. These projections have been compiled into a facility plan and design that suggests the following:

- A building with approximately 35,324 square feet will be required to support the functional and head-count requirements of the CDC facility.
- A parking lot with approximately 50,094 square feet will be required to support the functional and head-count requirements of the CDC facility.
- The estimated cost of the building structure, the parking lot and dispatch console furniture is approximately $8,050,805 million dollars.

Dispatch and Operations Center

While the staffing analysis indicates the need for seven call taker positions, the dispatch center has been designed to support 13 call taker positions; seven for current needs, three for overflow such as shift change and shift overlap, and three for future growth. The dispatch center was designed as well to handle five LCSO and seven TPD current dispatcher positions, two supervisor positions, one for each and two future dispatcher positions, one for each.

The Dispatch and Operations Center area should have at least a six-inch raised floor system, allowing for flexibility regarding the use of communications, computing equipment, and cabling to the CAD hardware equipment room. The room should be equipped with a variable lighting control system.

There is also a break room, a copy/file room, two supervisor's offices, one for LCSO and one for TPD, and a shared dispatcher/call-taker training room with nine fully-equipped positions in the dispatch and operations center. In addition, teleconferencing and audiovisual (AV) equipment should be installed in the training room.

Space Summary

As shown in the conceptual drawing in Figure 5-5, this alternative does not utilize the whole dispatch area assigned under the collocated alternative; the shaded area is not being used to size the facility. Thus, this will reduce the size of the dispatch area by about 2,000 sq ft.

Table 5-9 provides a summary of the space allocated for Dispatch for the EOC and for Operations Management.

Table 5-9 Space Summary

Department	Space
Dispatch	11,007
EOC	12,466
Operations Management	4,786
Total	28,259
Building Circulation 15%	4,239
Building Services Space 10%	2,826
Gross Building Space	35,324

Parking Lot

Section 4.2.2 describes the criteria used to design the parking lot. This alternative has 30 total positions, 13 call takers, 14 dispatchers and two supervisor positions to be considered.

Table 5-10 represents the required number of parking spaces required for this alternative.

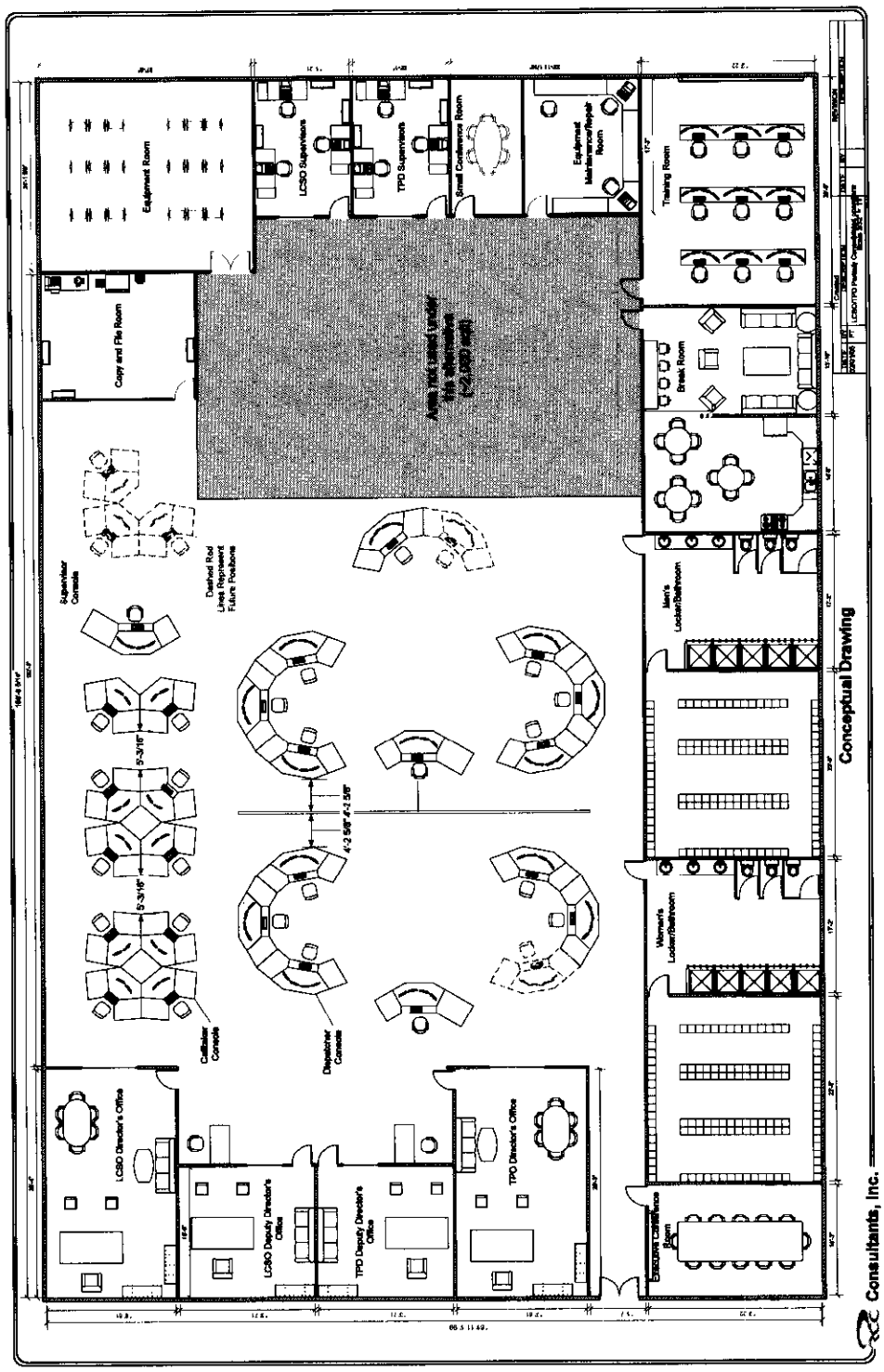
Table 5-10 Parking Lot Summary

Description	Number of Employees	Parking Spaces Required	Space (Sq. Ft.)
Dispatch Shift Positions	30	60	16,200
Management	8	8	2,160
EOC	80	80	21,600
Miscellaneous		4	1,080
Total Vehicles		152	41,040
ADA Vehicle Spaces		6	2,520
Parking Spaces		158	43,560
Parking Circulation 15%			6,534
Parking Lot space			50,094

Standard parking space size is 270 sq. ft.
ADA parking space size is 420 sq. ft.

5.3.4.2 FACILITY PHYSICAL LAYOUT

Figure 5-5 Conceptual Drawing for Partially Consolidated Operations



5.3.5 FULLY CONSOLIDATED

5.3.5.1 FACILITY SUMMARY

The spatial and equipment requirements for the CDC facility are based on the staffing analysis presented in section 5.2. The projections were developed based on workload information provided to RCC by the user agencies. These projections have been compiled into a facility plan and design that suggests the following:

- A building with approximately 33,588 square feet will be required to support the functional and head-count requirements of the CDC facility.
- A parking lot with approximately 48,231 square feet will be required to support the functional and head-count requirements of the CDC facility.
- The estimated cost of the building structure, the parking lot and dispatch console furniture is approximately $8,050,805 million dollars.

Dispatch and Operations Center

While the staffing analysis indicates the need for seven call taker positions, the dispatch center has been designed to support 13 call taker positions; seven for current needs, three for overflow such as shift change and shift overlap, and three for future growth. According to the staffing analysis there is the need for eight dispatchers; the CDC has been sized to support 13 dispatch positions, 10 for current needs and three for future growth.

The Dispatch and Operations Center area should have at least a six-inch raised floor system, allowing for flexibility regarding the use of communications, computing equipment, and cabling to the CAD hardware equipment room. The room should be equipped with a variable lighting control system.

There is also a break room, a copy/file room, a supervisor's office and a shared dispatcher/call-taker training room with nine fully-equipped positions in the dispatch and operations center. In addition, teleconferencing and audiovisual (AV) equipment should be installed in the training room.

Space Summary

As shown in the conceptual drawing Figure 5-6, this alternative does not utilize the whole dispatch area assigned under the collocated alternative; the shaded area is not being used to size the facility. Thus, this will reduce the size of the dispatch area by about 2605 sq ft. and operations management by 784 sq ft.

Table 5-11 provides a summary of the space allocated for Dispatch for the EOC and for Operations Management.

Table 5-11 Space Summary

Department	Space
Dispatch	10,402
EOC	12,466
Operations Management	4,002
Total	26,870
Building circulation 15%	4,031
Building Services Space 10%	2,687
Gross Building Space	33,588

Parking Lot

Section 4.2.2 describes the criteria used to design the parking lot. This alternative has 28 total positions, 13 call takers, 13 dispatchers and two supervisor positions to be considered.

Table 5-12 presents the required number of parking spaces required for this alternative.

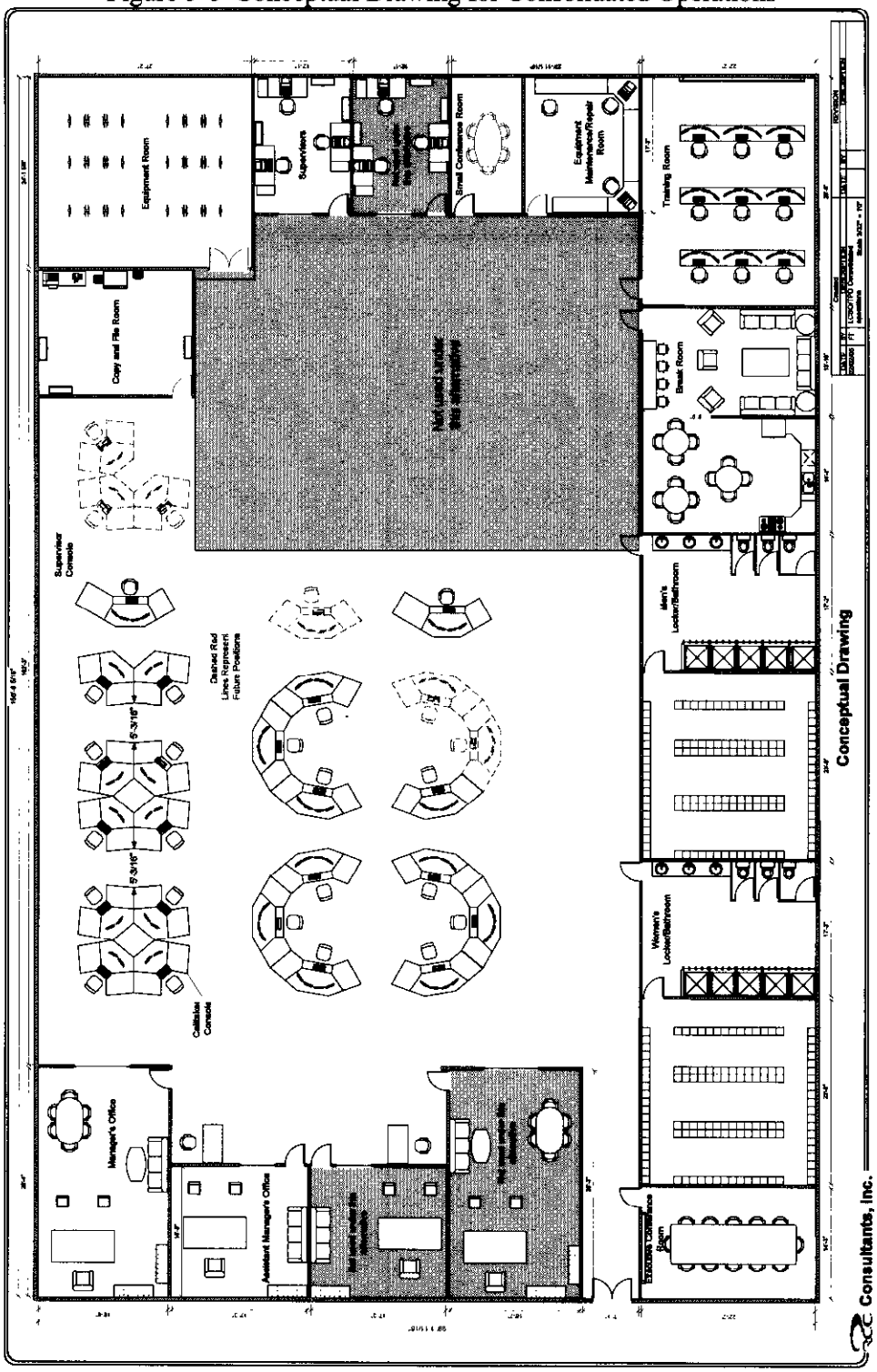
Table 5-12 Parking Lot Summary

Description	Number of Employees	Parking Spaces Required	Space (Sq. Ft.)
Dispatch Shift Positions	28	56	15,120
Management	6	6	1,620
EOC	80	80	21,600
Miscellaneous	--	4	1,080
Total Vehicles		146	39,420
ADA Vehicle Spaces		6	2,520
Parking Spaces		152	41,940
Parking Circulation 15%			6,291
Parking Lot space			48,231

Standard parking space size is 270 sq. ft.
ADA parking space size is 420 sq. ft.

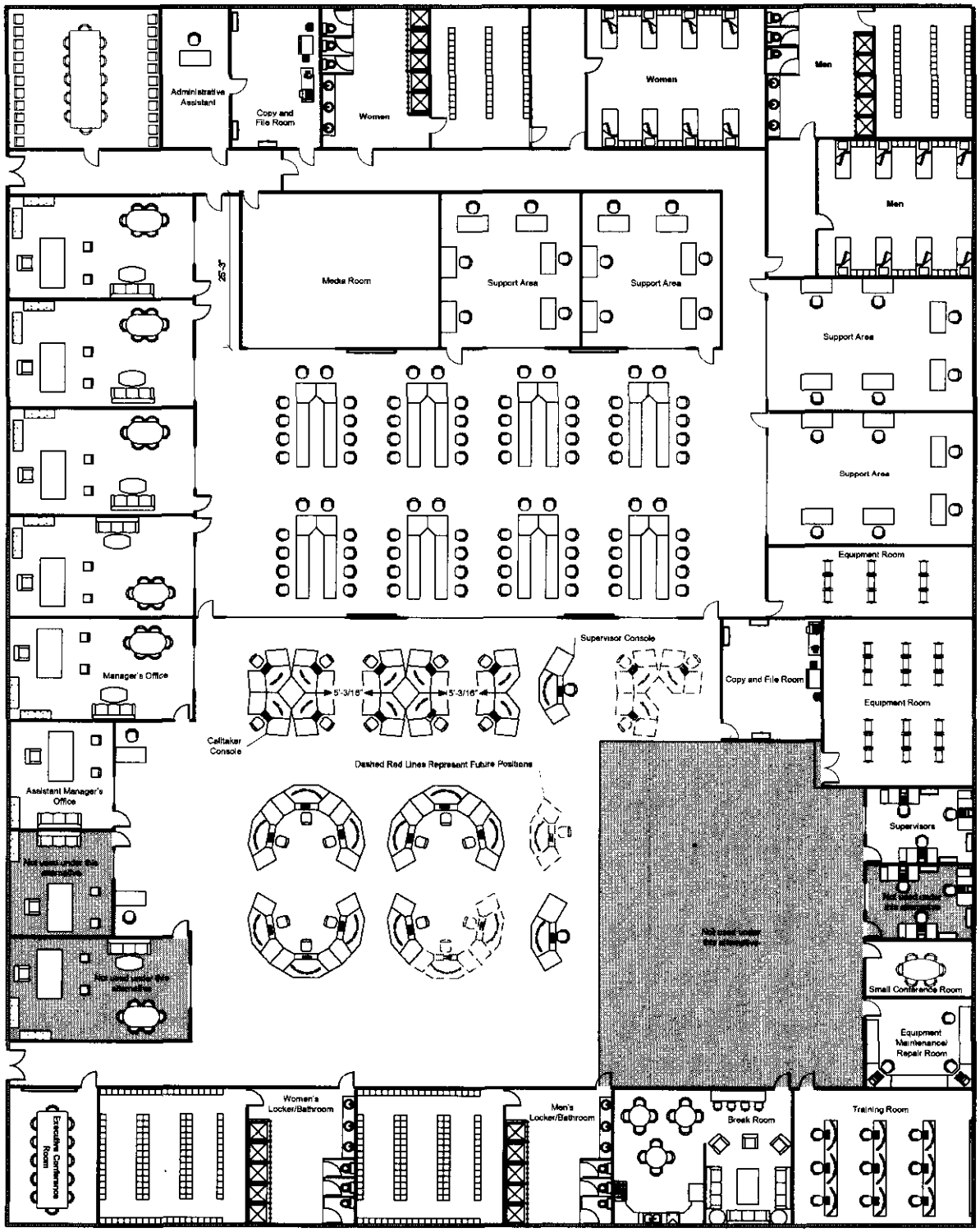
5.3.5.2 FACILITY PHYSICAL LAYOUT

Figure 5-6 Conceptual Drawing for Consolidated Operations



5.3.6 FACILITY CONCEPTUAL DRAWING

Figure 5-7 Combined Dispatch/EOC Facility Conceptual Drawing



Conceptual Drawing

5.4 SYSTEMS CONSIDERATIONS

5.4.1 COLLOCATION – CAD

In a collocated dispatch configuration, each agency would operate as they do now, but within the same facility. The only common dispatch system would be the 9-1-1 telephone system (as it is now). However, a CAD-to-CAD interface would be advisable to enable incident data to pass between the CAD systems for multi-agency incidents.

In this configuration, additional telephone transfer would still be required for Fire calls received outside of City limits (the 9-1-1 selective router would send the call to LCSO call takers who would have to transfer the caller to TPD call takers). This would also be true of EMS calls that occur within the City.

Additional CAD equipment would have to be implemented to provide continued services during the move to a new dispatch center. This equipment could be maintained thereafter for backup purposes.

5.4.2 COLLOCATION-RADIO AND MOBILE DATA

There is no anticipated impact on the existing voice radio system for any of the agencies dispatched in a collocated communications center. LCSO/EMS and TPD/TFD share use of the existing Motorola analog trunked radio. Collocation changes would include possible dispatch console and backup control station relocation and possible CEB relocation.

There is no anticipated impact on the existing separate mobile data infrastructures that support the LCSO and TPD mobile data networks. It is probable that the message switch, radio network controller and other possible mobile data control infrastructure will be moved.

5.4.3 PARTIAL CONSOLIDATION – CAD

In a Partial Consolidated configuration, common call takers would answer telephone/9-1-1 calls and enter CAD incidents into a common "call taker CAD application". The call taker CAD would send the incident data to the appropriate dispatch CAD system via a CAD-to-CAD interface. In cases where multiple agencies were required for response, the call taker CAD would send the incident data to all the appropriate dispatch CAD systems.

The call taker CAD application would require the following interfaces:

A. E9-1-1 – Delivery of 9-1-1 ALI Data to CAD.

B. Master Clock – Timing inputs from a Master Clock system.

C. CAD-to-CAD – Interfaces allowing call taker CAD information to pass to the dispatcher CAD system.

Additional dispatch CAD equipment would have to be implemented to provide continued services during the move to a new dispatch center. This equipment could be maintained thereafter for backup purposes.

5.4.4 PARTIAL CONSOLIDATION-RADIO AND MOBILE DATA

There is no anticipated impact on the existing voice radio system for any of the agencies dispatched in a partially consolidated communications center. LCSO/EMS and TPD/TFD share use of the existing Motorola analog trunked radio. Partial consolidation alternative changes would include possible dispatch console and backup control station relocation and possible CEB relocation.

There is no anticipated impact on the existing (but separate) mobile data infrastructures that support the LCSO and TPD mobile data networks. It is probable that the message switch, radio network controller and other mobile data control infrastructure will be moved.

5.4.5 FULL CONSOLIDATION – CAD

In a fully consolidated dispatch configuration, all public safety response resources would be dispatched by a single dispatch operation. Call takers would answer telephone/9-1-1 calls, enter incident information into a common CAD system and transfer the CAD incident to the appropriate dispatcher (based on incident jurisdiction). If the County/City chooses to fully consolidate dispatch operations, one CAD system should be chosen for all operations (LCSO, TPD, TFD, and LCEMS). Currently, three CAD systems are in place in the County (LCSO - Lawrence and Associates CAD, Leon County EMS – Zoll Data Systems RightCAD, and TPD/TFD – Printrak CAD). LCSO and TPD currently use the following CAD systems:

A. LCSO's **Lawrence and Associates CAD** is a text-based application that provides LCSO with the basic CAD functionality and an interface with the 9-1-1 system map. The system is very reliable and LCSO receives timely maintenance and enhancements from Lawrence and Associates. It is likely that this CAD product could be modified/enhanced to support Countywide Law Enforcement, Fire, and EMS dispatch operations.

B. TPD uses a new **Printrak CAD** application that was implemented in 2003. This map-based CAD product uses a graphic user interface that operates similar to typical Windows-based PC applications. Additional Printrak dispatch modules could be implemented to provide Countywide Law Enforcement, Fire, and EMS dispatch operations.

While these systems adequately serve the individual agencies, it would not be possible to "turn off" these CAD systems, relocate them to a new dispatch center, and reinstall and test them without adversely effecting dispatch operations. Further, a new "Consolidated CAD System" must be able to serve all agency dispatch requirements as a single system.

Therefore, in a new consolidated dispatch center a single, "multi-agency, multi-jurisdiction" CAD system is required to handle dispatch and track resources for all user agencies. This CAD system must be capable of handling the unique dispatch requirements for Sheriff, Police, Fire, and EMS operations utilizing individual software modules specifically designed for each type of agency.

In addition, the new CAD system must have interfaces back into all of the users' existing Records Management Systems (RMS). These interfaces will be required to "download" completed CAD incident records into the individual jurisdictions records systems.

Other interfaces to consider for the new consolidated CAD System would include:

A. Message Switch – Enable access to FCIC and NCIC

B. FCIC/NCIC – Terminal emulation and access ports

C. Mobile Computer – Enable messaging between CAD terminals and Mobile Data Communications units

D. E9-1-1 – Delivery of 9-1-1 ALI Data to CAD

E. Master Clock – Timing inputs from a Master Clock system

F. Emergency Radio Button Translation of Radio Unit I.D. to user name and display on CAD screen

G. Alphanumeric Paging – Ability to create page messages on CAD screen and transmit to Alphanumeric Pagers (private or commercial carrier)

H. Fire Station Alerting – Interface to encoders allowing Fire Station Alerting from CAD Terminal

5.4.6 FULL CONSOLIDATION-RADIO AND MOBILE DATA

There is no anticipated impact on the existing voice radio system for any of the agencies dispatched in a fully consolidated communications center. LCSO/EMS and TPD/TFD share use of the existing Motorola analog trunked radio system. Full consolidation alternative changes would include possible dispatch console and backup control station relocation and possible CEB relocation.

Full consolidation of the communication center would include a common CAD system for all agencies. A centralized CAD dispatch system will require that some agencies replace their existing mobile data application. Alternatively, new system interfaces may be used with the existing mobile application. Additional impacts include on the existing (but separate) mobile data infrastructures that support the LCSO and TPD mobile data networks are relocation/replacement of message switch, radio network controller and other mobile data control infrastructure.

5.5 BUDGETARY CONSIDERATIONS

5.5.1 COLLOCATION

STAFFING

No budgetary impact is anticipated for the collocation alternative.

CAD

In a collocated center, each agency would move its CAD hardware/software to the new facility. An important consideration here is relocating existing system hardware to the new facility while maintaining public safety dispatch services to the County/City citizens. It is recommended that each agency implement minimal dispatch operations at the new facility prior to deactivating operations at the existing facilities.

PHYSICAL FACILITY

Table 5-13 presents the cost associated with building the new facility.

Table 5-13 Cost Summary

Description	Size (sq ft)/ Quantity	Price	Subtotal
Raised Floor With Circulation	17,611	$250	$4,402,750
Non Raised Floor with Circulation	17,187	$125	$2,148,375
Parking Lot	61,272	$20	$1,225,440
		Total Facility Cost	**$7,776,565**
		Architectural and Engineering Cost 10 %	**$777,656**
Dispatch Console Furniture	32	$15,000	$480,000
		Grand Total	**$9,034,221**

5.5.2 PARTIAL CONSOLIDATION

STAFFING

Total telecommunicator personnel are reduced by 9.5 percent (10 people) in the partial consolidation alternative as compared to collocation. The resulting reduction in telecommunicator payroll will be approximately $390,000 annually.

CAD

Partial consolidation would require the purchase of additional CAD workstations for whichever CAD would be used as the call taker CAD plus an interface to the other system (i.e., if the Printrak CAD is chosen to be the call taker CAD, additional Printrak call taker workstations would have to be implemented plus an interface to the Lawrence and Associates CAD and EMS RightCAD).

Table 5-14 provides a summary of estimated costs implement the Lawrence and Associates CAD as the "call taker CAD". System cost details are provided in Appendix 1.

Table 5-14 – Lawrence and Associates Call Taker CAD

Upgraded CAD Subsystem	Estimated Cost	Notes
System Software	$0	Call taker workstation software (+2 WS)
System Hardware	$7,000	Call taker and Administrator H/W, printers
Interfaces	$15,000	CAD-to-CAD interface
Training	$10,000	Call taker training for TPD telecommunicators (salary costs for TPD trainees and LCSO trainers)
Acceptance Testing	$5,000	CAD-to-CAD interface testing
Project Management	$5,000	Interface design
Other Costs	$3,700	Bond, installation, warranty, shipping, etc.
Total	**$40,700**	

Table 5-15 provides a summary of estimated costs to implement the Printrak CAD as the "call taker CAD". System cost details are provided in Appendix 2.

Table 5-15 – Printrak Call Taker CAD

Upgraded CAD Subsystem	Estimated Cost	Notes
System Software	$20,000	Call taker workstation software (+1 WS).
System Hardware	$22,000	Call taker hardware.
Interfaces	$15,000	CAD-to-CAD interface
Training	$19,000	Call taker training for LCSO telecommunicators
Acceptance Testing	$5,000	CAD-to-CAD interface testing
Project Management	$5,000	Interface design
Other Costs	$8,600	Bond, installation, warranty, shipping, etc.
Total	**$94,600**	

PHYSICAL FACILITIES

Table 5-16 presents the cost associated with building the new facility.

Table 5-16 Cost Summary

Description	Size (sq ft)/ Quantity	Price	Subtotal
Raised Floor With Circulation	15,311	$250	$3,827,750
Non Raised Floor with Circulation	17,187	$125	$2,148,375
Parking Lot	50,094	$20	$1.001,880
		Total Facility Cost	**$6,978,005**
		Architectural and Engineering Cost 10 %	**$697,800**
Dispatch Console Furniture	25	$15,000	$375,000
		Grand Total	**$8,050,805**

5.5.3 FULL CONSOLIDATION

STAFFING

Total telecommunicator personnel are reduced by 19 percent (20 people) in the full consolidation alternative as compared to collocation. The resulting reduction in telecommunicator payroll will be approximately $780,000 annually. Additionally, a reduction in communication center management personnel (half the management staff) is anticipated to further reduce personnel cost by $293,750/year. Other reductions may be realized in technical support personnel but are not quantified in this report.

CAD

In a fully consolidated configuration, all call takers and dispatchers would utilize the same CAD system. As described in Section 5.3.5, there are three viable options for implementing a common CAD: 1) upgrade LCSO's CAD, 2) upgrade TPD's CAD, or 3) purchase a new CAD via competitive procurement. Rough estimates are provided below for each of these options.

Table 5-17 provides a summary of estimated costs to upgrade LCSO's CAD to provide a common CAD for all the Leon County dispatch agencies. System cost details are provided in Appendix 3.

Table 5-17 – Upgrade Lawrence and Associates CAD

Upgraded CAD Subsystem	Estimated Cost	Notes
System Software	$20,000	Maintain existing CAD. Add workstations for TPD, TFD, and EMS (+7 WS). Modify CAD database to support additional agency response policies.
System Hardware	$19,500	Call taker, dispatcher, administrator H/W, printers
Interfaces	$25,000	Implement interfaces with TPD's RMS and MDCS.
Training	$10,000	Train TPD telecommunicators (TPD trainees and LCSO trainer salaries)
Acceptance Testing	$0	CAD already tested for functionality, throughput, and reliability.
Project Management	$0	
Other Costs	$7,450	Bond, installation, warranty, shipping, etc.
Total	**$81,950**	

Table 5-18 provides a summary of estimated costs to upgrade TPD's CAD to provide a common CAD for all the Leon County dispatch agencies. System cost details are provided in Appendix 4.

Table 5-18 – Upgrade Printrak CAD

Upgraded CAD Subsystem	Estimated Cost	Notes
System Software	$65,000	Maintain existing CAD. Add workstations for LCSO and EMS (+4 WS). Modify CAD database to support additional agency response policies.
System Hardware	$62,000	Upgrade CAD server/memory hardware, software, and operating systems.
Interfaces	$55,000	Implement interfaces with LCSO's RMS and MDCS.
Training	$19,000	Train TPD telecommunicators on the Lawrence and Associates CAD.
Acceptance Testing	$0	CAD already tested for functionality, throughput, and reliability.
Project Management	$0	
Other Costs	$20,100	Bond, installation, warranty, shipping, etc.
Total	**$221,100**	

Table 5-19 provides a summary of estimated costs to procure a new tier 1 CAD to provide a common CAD for all the Leon County dispatch agencies. System cost details are provided in Appendix 5

Table 5-19 – Procure New Tier 1 CAD

Upgraded CAD Subsystem	Estimated Cost	Notes
System Software	$630,000	All New
System Hardware	$279,000	All New
Interfaces	$225,000	All New
Training	$49,000	Train All Telecommunicators
Acceptance Testing	$80,000	Test New System
Project Management	$190,000	Design/Implement New System
Other Costs	$276,070	Bond, installation, warranty, shipping, etc.
Procurement Documents Prep	$75,000	
Total	**$1,804,070**	

PHYSICAL FACILITIES

Table 5-20 presents the cost associated with building the new facility.

Table 5-20 Cost Summary

Description	Size (sq ft)/ Quantity	Price	Subtotal
Raised Floor With Circulation	14,616	$250	$ 3,654,000
Non Raised Floor with Circulation	16,286	$125	$ 2,035,750
Parking Lot	48,231	$20	$ 964,620
Total Facility Cost			**$ 6,654,370**
Architectural and Engineering Cost 10 %			**$665,437**
Dispatch Console Furniture	22	$15,000	$ 330,000
Grand Total			**$ 7,649,807**

5.6 BENEFIT ANALYSIS

5.6.1 COLLOCATION ADVANTAGES

A. Facility cutover would be simple; existing systems and policies would be used.

5.6.2 COLLOCATION DISADVANTAGES

A. 9-1-1 Callers would still be transferred for Fire calls in the County and EMS calls in the City.

B. Employees with different salaries and benefit packages will be working in close proximity.

C. This alternative has the highest facilities cost.

D. This alternative requires the greatest quantity of telecommunicator and management personnel.

E. This alternative result in a more complex management arrangement as compared to the consolidated alternative.

5.6.3 PARTIAL CONSOLIDATION ADVANTAGES

A. Single call taker operation would eliminate multiple call transfers which should improve response time.

B. Multiple CAD system redundancy. Disparate CAD systems could be configured to provide backup service.

C. This alternative results in a reduced quantity of telecommunicator personnel by 9.5 percent (105 to 95 personnel) relative to the collocation alternative.

5.6.4 PARTIAL CONSOLIDATION DISADVANTAGES

A. Acceptable call taker salaries and benefits would have to be negotiated/implemented.

B. Common dispatch policies would have to be developed and implemented.

C. This alternative may result in a more complex management arrangement.

D. Dispatch system differences would complicate cross-training for all telecommunicator positions.

5.6.5 FULL CONSOLIDATION ADVANTAGES

A. Single call taker operation would eliminate multiple emergency call transfers, which should improve response time and therefore improve public safety services to Leon County citizens.

B. Common CAD system equipment and software applications would simplify training and maintenance.

C. This alternative has the lowest facilities cost.

D. This alternative results in a reduced quantity of telecommunicator personnel by 19 percent (105 to 85 personnel) relative to the collocation alternative.

5.6.6 FULL CONSOLIDATION DISADVANTAGES

A. All communications officers and supervisors would have to be trained on the new CAD system.

B. Acceptable communications officers and supervisor salaries and benefits would have to be negotiated/implemented.

C. Common dispatch policies would have to be developed and implemented.

6.0 APPENDICES

Appendix 1 CAD Budgetary Consideration Details – Partial Consolidation (LCSO Call Taker CAD)

Estimated CAD System Costs - Partial Consolidation (LCSO Call Taker CAD)

Item	CAD System Software and Installation Services	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
1	Base CAD System Software	$ 250,000.00	0	0	0	$ -	$ -	$ -	$ -
2	CAD Workstation S/W	$ -	0	0	3	$ -	$ -	$ -	$ -
3	CAD Tactical Map Display Software	$ 100,000.00	0	0	0	$ -	$ -	$ -	$ -
4	CAD Management Information System and Reporting software	$ 20,000.00	0	0	0	$ -	$ -	$ -	$ -
5	CAD Geofile conversion/development/testing/installation	$ 100,000.00	0	0	0	$ -	$ -	$ -	$ -
6	CAD Database creation/installation/testing	$ 5,000.00	0	0	0	$ -	$ -	$ -	$ -

Item	CAD System Hardware and Operating Systems	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
7	CAD Server Hardware, Software and Operating System	$ 5,000	0	0	0	$ -	$ -	$ -	$ -
8	Message Switch	$ 10,000	0	0	0	$ -	$ -	$ -	$ -
9	Remote dialup servers, modems, racks, cables and installation	$ 25,000	0	0	0	$ -	$ -	$ -	$ -
10	Call Taker/Dispatch/Supervisor Workstations	$ 1,500	0	2	0	$ -	$ 3,000	$ -	$ 3,000
11	Administrator Workstations	$ 1,000	0	1	0	$ -	$ 1,000	$ -	$ 1,000
12	Printers	$ 1,500	0	0	2	$ -	$ -	$ 3,000	$ 3,000

Item	CAD System Interfaces	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
13	FCIC/NCIC	$ 50,000.00	0	0	0	$ -	$ -	$ -	$ -
14	TDD	$ 15,000.00	0	0	0	$ -	$ -	$ -	$ -
15	E9-1-1 Telephone	$ 25,000.00	0	0	0	$ -	$ -	$ -	$ -
16	Law Enforcement RMS	$ 20,000.00	0	0	0	$ -	$ -	$ -	$ -
17	Fire RMS	$ 20,000.00	0	0	0	$ -	$ -	$ -	$ -
17	MDCS	$ 35,000.00	0	0	0	$ -	$ -	$ -	$ -
18	CAD-to-CAD	$ 15,000.00	0	0	1	$ -	$ -	$ 15,000	$ 15,000

Item	CAD Training	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
19	Call Taker/Dispatcher/Supervisor Training	$ 8,000.00	0	1	0	$ -	$ 8,000	$ -	$ 8,000
20	CAD System Administrators	$ 2,000.00	0	1	0	$ -	$ 2,000	$ -	$ 2,000

Item	Acceptance Testing	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
21	Functional Testing	$ 5,000.00	0	0	0	$ -	$ -	$ -	$ -
22	Throughput Testing	$ 25,000.00	0	0	0	$ -	$ -	$ -	$ -
23	Reliability Testing	$ 25,000.00	0	0	0	$ -	$ -	$ -	$ -

Item	Project Management	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
24	System Project Management	$ 75,000.00	0	0	0	$ -	$ -	$ -	$ -
25	Project Related Travel Expenses	$ 15,000.00	0	0	0	$ -	$ -	$ -	$ -
26	System Engineering	$ 5,000.00	0	0	1	$ -	$ -	$ 5,000	$ 5,000

Item	Other Project Costs	Unit Budget	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
27	Bond		$ -	$ -	$ -	$ -
28	Installation		$ -	$ -	$ -	$ -
29	CAD System Warranty		$ -	$ -	$ -	$ -
30	Sales tax		$ -	$ -	$ -	$ -
31	Shipping/Freight		$ -	$ -	$ -	$ -
32	Contingency	10%				$ 3,700

Summary	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
CAD System Software and Installation Services	$ -	$ -	$ -	$ -
CAD System Hardware and Operating Systems	$ -	$ 4,000	$ 3,000	$ 7,000
CAD System Interfaces	$ -	$ -	$ 15,000	$ 15,000
CAD Training	$ -	$ 10,000	$ -	$ 10,000
Acceptance Testing	$ -	$ -	$ -	$ -
Project Management	$ -	$ -	$ 5,000	$ 5,000
Other Project Costs	$ -	$ -	$ -	$ 3,700
Total Purchase Budget Estimate:	**$ -**	**$ 14,000**	**$ 23,000**	**$ 40,700**

Appendix 2 CAD Budgetary Consideration Details – Partial Consolidation (TPD Call Taker CAD)

Estimated CAD System Costs - Partial Consolidation (TPD Call Taker CAD)

Item	CAD System Software and Installation Services	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
1	Base CAD System Software	$ 250,000.00	0	0	0	$ -	$ -	$ -	$ -
2	CAD Workstation S/W	$ 5,000.00	2	0	0	$ 10,000	$ -	$ -	$ 10,000
3	CAD Tactical Map Display Software	$ 100,000.00	0	0	0	$ -	$ -	$ -	$ -
4	CAD Management Information System and Reporting software	$ 20,000.00	0	0	0	$ -	$ -	$ -	$ -
5	CAD Geofile conversion/development/testing/installation	$ 100,000.00	0	0	0	$ -	$ -	$ -	$ -
6	CAD Database creation/installation/testing	$ 10,000.00	0	0	1	$ -	$ -	$ 10,000	$ 10,000

Item	CAD System Hardware and Operating Systems	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
7	CAD Server Hardware, Software and Operating System	$ 10,000	0	0	0	$ -	$ -	$ -	$ -
8	Message Switch	$ 10,000	0	0	0	$ -	$ -	$ -	$ -
9	Remote dialup servers, modems, racks, cables and installation	$ 25,000	0	0	0	$ -	$ -	$ -	$ -
10	Call Taker/Dispatch/Supervisor Workstations	$ 10,000	1	0	0	$ 10,000	$ -	$ -	$ 10,000
11	Administrator Workstations	$ 9,000	1	0	0	$ 9,000	$ -	$ -	$ 9,000
12	Printers	$ 1,500	0	0	2	$ -	$ -	$ 3,000	$ 3,000

Item	CAD System Interfaces	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
13	FCIC/NCIC	$ 50,000.00	0	0	0	$ -	$ -	$ -	$ -
14	TDD	$ 15,000.00	0	0	0	$ -	$ -	$ -	$ -
15	E9-1-1 Telephone	$ 25,000.00	0	0	0	$ -	$ -	$ -	$ -
16	Law Enforcement RMS	$ 20,000.00	0	0	0	$ -	$ -	$ -	$ -
17	Fire RMS	$ 20,000.00	0	0	0	$ -	$ -	$ -	$ -
17	MDCS	$ 35,000.00	0	0	0	$ -	$ -	$ -	$ -
18	CAD-to-CAD Interface	$ 15,000.00	0	0	1	$ -	$ -	$ 15,000	$ 15,000

Item	CAD Training	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
19	Call Taker/Dispatcher/Supervisor Training	$ 500.00	37	0	0	$ 18,500	$ -	$ -	$ 18,500
20	CAD System Administrators	$ 500.00	1	0	0	$ 500	$ -	$ -	$ 500

Item	Acceptance Testing	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
21	Functional Testing	$ 5,000.00	0	0	1	$ -	$ -	$ 5,000	$ 5,000
22	Throughput Testing	$ 25,000.00	0	0	0	$ -	$ -	$ -	$ -
23	Reliability Testing	$ 25,000.00	0	0	0	$ -	$ -	$ -	$ -

Item	Project Management	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
24	System Project Management	$ 75,000.00	0	0	0	$ -	$ -	$ -	$ -
25	Project Related Travel Expenses	$ 15,000.00	0	0	0	$ -	$ -	$ -	$ -
26	System Engineering	$ 5,000.00	0	0	1	$ -	$ -	$ 5,000	$ 5,000

Item	Other Project Costs	Unit Budget	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
27	Bond		$ -	$ -	$ -	$ -
28	Installation		$ -	$ -	$ -	$ -
29	CAD System Warranty		$ -	$ -	$ -	$ -
30	Sales tax		$ -	$ -	$ -	$ -
31	Shipping/Freight		$ -	$ -	$ -	$ -
32	Contingency	10%				$ 8,600

	Summary	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
	CAD System Software and Installation Services	$ 10,000	$ -	$ 10,000	$ 20,000
	CAD System Hardware and Operating Systems	$ 19,000	$ -	$ 3,000	$ 22,000
	CAD System Interfaces	$ -	$ -	$ 15,000	$ 15,000
	CAD Training	$ 19,000	$ -	$ -	$ 19,000
	Acceptance Testing	$ -	$ -	$ 5,000	$ 5,000
	Project Management	$ -	$ -	$ 5,000	$ 5,000
	Other Project Costs	$ -	$ -	$ -	$ 8,600
	Total Purchase Budget Estimate:	**$ 48,000**	**$ -**	**$ 38,000**	**$ 94,600**

Appendix 3 CAD Budgetary Consideration Details – Full Consolidation (LCSO CAD Upgrade)

Estimated CAD System Costs - Full Consolidation (LCSO CAD)

Item	CAD System Software and Installation Services	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
1	Base CAD System Software	$ 250,000.00	0	0	0	$ -	$ -	$ -	$ -
2	CAD Workstation S/W	$ -	0	0	8	$ -	$ -	$ -	$ -
3	CAD Tactical Map Display Software	$ 100,000.00	0	0	0	$ -	$ -	$ -	$ -
4	CAD Management Information System and Reporting software	$ 20,000.00	0	0	0	$ -	$ -	$ -	$ -
5	CAD Geofile conversion/development/testing/installation	$ 100,000.00	0	0	0	$ -	$ -	$ -	$ -
6	CAD Database creation/installation/testing	$ 20,000.00	0	0	1	$ -	$ -	$ 20,000	$ 20,000

Item	CAD System Hardware and Operating Systems	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
7	CAD Server Hardware, Software and Operating System	$ 5,000	0	0	1	$ -	$ -	$ 5,000	$ 5,000
8	Message Switch	$ 10,000	0	0	0	$ -	$ -	$ -	$ -
9	Remote dialup servers, modems, racks, cables and installation	$ 25,000	0	0	0	$ -	$ -	$ -	$ -
10	Call Taker/Dispatch/Supervisor Workstations	$ 1,500	0	0	7	$ -	$ -	$ 10,500	$ 10,500
11	Administrator Workstations	$ 1,000	0	0	1	$ -	$ -	$ 1,000	$ 1,000
12	Printers	$ 1,500	0	0	2	$ -	$ -	$ 3,000	$ 3,000

Item	CAD System Interfaces	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
13	FCIC/NCIC	$ 50,000.00	0	0	0	$ -	$ -	$ -	$ -
14	TDD	$ 15,000.00	0	0	0	$ -	$ -	$ -	$ -
15	E9-1-1 Telephone	$ 25,000.00	0	0	0	$ -	$ -	$ -	$ -
16	Law Enforcement RMS	$ 15,000.00	0	1	0	$ -	$ 15,000	$ -	$ 15,000
17	Fire RMS	$ 5,000.00	0	1	0	$ -	$ 5,000	$ -	$ 5,000
17	MDCS	$ 5,000.00	0	0	1	$ -	$	$ 5,000	$ 5,000
18	Master Clock	$ 5,000.00	0	0	0	$ -	$ -	$ -	$ -

Item	CAD Training	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
19	Call Taker/Dispatcher/Supervisor Training	$ 8,000.00	0	1	0	$ -	$ 8,000	$ -	$ 8,000
20	CAD System Administrators	$ 2,000.00	0	1	0	$ -	$ 2,000	$ -	$ 2,000

Item	Acceptance Testing	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
21	Functional Testing	$ 30,000.00	0	0	0	$ -	$ -	$ -	$ -
22	Throughput Testing	$ 25,000.00	0	0	0	$ -	$ -	$ -	$ -
23	Reliability Testing	$ 25,000.00	0	0	0	$ -	$ -	$ -	$ -

Item	Project Management	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
24	System Project Management	$ 75,000.00	0	0	0	$ -	$ -	$ -	$ -
25	Project Related Travel Expenses	$ 15,000.00	0	0	0	$ -	$ -	$ -	$ -
26	System Engineering	$ 125,000.00	0	0	0	$ -	$ -	$ -	$ -

Item	Other Project Costs	Unit Budget	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
27	Bond		$ -	$ -	$ -	$ -
28	Installation		$ -	$ -	$ -	$ -
29	CAD System Warranty		$ -	$ -	$ -	$ -
30	Sales tax		$ -	$ -	$ -	$ -
31	Shipping/Freight		$ -	$ -	$ -	$ -
32	Contingency	10%				$ 7,450

	Summary	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
	CAD System Software and Installation Services	$ -	$ -	$ 20,000	$ 20,000
	CAD System Hardware and Operating Systems	$ -	$ -	$ 19,500	$ 19,500
	CAD System Interfaces	$ -	$ 20,000	$ 5,000	$ 25,000
	CAD Training	$ -	$ 10,000	$ -	$ 10,000
	Acceptance Testing	$ -	$ -	$ -	$ -
	Project Management	$ -	$ -	$ -	$ -
	Other Project Costs	$ -	$ -	$ -	$ 7,450
	Total Purchase Budget Estimate:	**$ -**	**$ 30,000**	**$ 44,500**	**$ 81,950**

Appendix 4 CAD Budgetary Consideration Details – Full Consolidation (TPD CAD Upgrade)

Estimated CAD System Costs - Full Consolidation (TPD CAD)

Item	CAD System Software and Installation Services	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
1	Base CAD System Software	$ 250,000.00	0	0	0	$ -	$ -	$ -	$ -
2	CAD Workstation S/W	$ 5,000.00	5	0	0	$ 25,000	$ -	$ -	$ 25,000
3	CAD Tactical Map Display Software	$ 100,000.00	0	0	0	$ -	$ -	$ -	$ -
4	CAD Management Information System and Reporting software	$ 20,000.00	0	0	0	$ -	$ -	$ -	$ -
5	CAD Geofile conversion/development/testing/installation	$ 100,000.00	0	0	0	$ -	$ -	$ -	$ -
6	CAD Database creation/installation/testing	$ 40,000.00	1	0	0	$ 40,000	$ -	$ -	$ 40,000

Item	CAD System Hardware and Operating Systems	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
7	CAD Server Hardware, Software and Operating System	$ 10,000	0	0	1	$ -	$ -	$ 10,000	$ 10,000
8	Message Switch	$ 10,000	0	0	0	$ -	$ -	$ -	$ -
9	Remote dialup servers, modems, racks, cables and installation	$ 25,000	0	0	0	$ -	$ -	$ -	$ -
10	Call Taker/Dispatch/Supervisor Workstations	$ 10,000	4	0	0	$ 40,000	$ -	$ -	$ 40,000
11	Administrator Workstations	$ 9,000	1	0	0	$ 9,000	$ -	$ -	$ 9,000
12	Printers	$ 1,500	2	0	0	$ 3,000	$ -	$ -	$ 3,000

Item	CAD System Interfaces	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
13	FCIC/NCIC	$ 50,000.00	0	0	0	$ -	$ -	$ -	$ -
14	TDD	$ 15,000.00	0	0	0	$ -	$ -	$ -	$ -
15	E9-1-1 Telephone	$ 25,000.00	0	0	0	$ -	$ -	$ -	$ -
16	Law Enforcement RMS	$ 20,000.00	1	0	0	$ 20,000	$ -	$ -	$ 20,000
17	Fire RMS	$ 20,000.00	0	0	0	$ -	$ -	$ -	$ -
17	MDCS	$ 35,000.00	1	0	0	$ 35,000	$ -	$ -	$ 35,000
18	Master Clock	$ 5,000.00	0	0	0	$ -	$ -	$ -	$ -

Item	CAD Training	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
19	Call Taker/Dispatcher/Supervisor Training	$ 500.00	37	0	0	$ 18,500	$ -	$ -	$ 18,500
20	CAD System Administrators	$ 500.00	1	0	0	$ 500	$ -	$ -	$ 500

Item	Acceptance Testing	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
21	Functional Testing	$ 30,000.00	0	0	0	$ -	$ -	$ -	$ -
22	Throughput Testing	$ 25,000.00	0	0	0	$ -	$ -	$ -	$ -
23	Reliability Testing	$ 25,000.00	0	0	0	$ -	$ -	$ -	$ -

Item	Project Management	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
24	System Project Management	$ 75,000.00	0	0	0	$ -	$ -	$ -	$ -
25	Project Related Travel Expenses	$ 15,000.00	0	0	0	$ -	$ -	$ -	$ -
26	System Engineering	$ 125,000.00	0	0	0	$ -	$ -	$ -	$ -

Item	Other Project Costs	Unit Budget	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
27	Bond		$ -	$ -	$ -	$ -
28	Installation		$ -	$ -	$ -	$ -
29	CAD System Warranty		$ -	$ -	$ -	$ -
30	Sales tax		$ -	$ -	$ -	$ -
31	Shipping/Freight		$ -	$ -	$ -	$ -
32	Contingency	10%				$ 20,100

	Summary	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
	CAD System Software and Installation Services	$ 65,000	$ -	$ -	$ 65,000
	CAD System Hardware and Operating Systems	$ 52,000	$ -	$ 10,000	$ 62,000
	CAD System Interfaces	$ 55,000	$ -	$ -	$ 55,000
	CAD Training	$ 19,000	$ -	$ -	$ 19,000
	Acceptance Testing	$ -	$ -	$ -	$ -
	Project Management	$ -	$ -	$ -	$ -
	Other Project Costs	$ -	$ -	$ -	$ 20,100
	Total Purchase Budget Estimate:	**$ 191,000**	**$ -**	**$ 10,000**	**$ 221,100**

Appendix 5 CAD Budgetary Consideration Details – Full Consolidation (New CAD Procurement)

Estimated CAD System Costs - Full Consolidation (New CAD)

Item	CAD System Software and Installation Services	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
1	Base CAD System Software	$ 250,000.00	0	0	1	$ -	$ -	$ 250,000	$ 250,000
2	CAD Workstation S/W	$ 5,000.00	0	0	24	$ -	$ -	$ 120,000	$ 120,000
3	CAD Tactical Map Display Software	$ 100,000.00	0	0	1	$ -	$ -	$ 100,000	$ 100,000
4	CAD Management Information System and Reporting software	$ 20,000.00	0	0	1	$ -	$ -	$ 20,000	$ 20,000
5	CAD Geofile conversion/development/testing/installation	$ 100,000.00	0	0	1	$ -	$ -	$ 100,000	$ 100,000
6	CAD Database creation/installation/testing	$ 40,000.00	0	0	1	$ -	$ -	$ 40,000	$ 40,000

Item	CAD System Hardware and Operating Systems	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
7	CAD Server Hardware, Software and Operating System	$ 10,000	0	0	1	$ -	$ -	$ 10,000	$ 10,000
8	Message Switch	$ 10,000	0	0	0	$ -	$ -	$ -	$ -
9	Remote dialup servers, modems, racks, cables and installation	$ 25,000	0	0	1	$ -	$ -	$ 25,000	$ 25,000
10	Call Taker/Dispatch/Supervisor Workstations	$ 10,000	0	0	22	$ -	$ -	$ 220,000	$ 220,000
11	Administrator Workstations	$ 9,000	1	1	0	$ 9,000	$ 9,000	$ -	$ 18,000
12	Printers	$ 1,500	2	2	0	$ 3,000	$ 3,000	$ -	$ 6,000

Item	CAD System Interfaces	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
13	FCIC/NCIC	$ 50,000.00	0	0	1	$ -	$ -	$ 50,000	$ 50,000
14	TDD	$ 15,000.00	0	0	1	$ -	$ -	$ 15,000	$ 15,000
15	E9-1-1 Telephone	$ 25,000.00	0	0	1	$ -	$ -	$ 25,000	$ 25,000
16	Law Enforcement RMS	$ 20,000.00	1	1	0	$ 20,000	$ 20,000	$ -	$ 40,000
17	Fire RMS	$ 20,000.00	0	1	0	$ -	$ 20,000	$ -	$ 20,000
17	MDCS	$ 35,000.00	1	1	0	$ 35,000	$ 35,000	$ -	$ 70,000
18	Master Clock	$ 5,000.00	0	0	1	$ -	$ -	$ 5,000	$ 5,000

Item	CAD Training	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
19	Call Taker/Dispatcher/Supervisor Training	$ 500.00	37	59		$ 18,500	$ 29,500	$ -	$ 48,000
20	CAD System Administrators	$ 500.00	1	1		$ 500	$ 500	$ -	$ 1,000

Item	Acceptance Testing	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
21	Functional Testing	$ 30,000.00	0	0	1	$ -	$ -	$ 30,000	$ 30,000
22	Throughput Testing	$ 25,000.00	0	0	1	$ -	$ -	$ 25,000	$ 25,000
23	Reliability Testing	$ 25,000.00	0	0	1	$ -	$ -	$ 25,000	$ 25,000

Item	Project Management	Unit Budget	Quant LCSO	Quant TPD	Quant Consort.	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
24	System Project Management	$ 75,000.00	0	0	1	$ -	$ -	$ 75,000	$ 75,000
25	Project Related Travel Expenses	$ 15,000.00	0	0	1	$ -	$ -	$ 15,000	$ 15,000
26	System Engineering	$ 100,000.00	0	0	1	$ -	$ -	$ 100,000	$ 100,000

Item	Other Project Costs	Unit Budget	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
27	Bond	10%	$ 8,600	$ 11,700	$ 125,000	$ 145,300
28	Installation	6%	$ 5,160	$ 7,020	$ 75,000	$ 87,180
29	CAD System Warranty	2%	$ 1,720	$ 2,340	$ 25,000	$ 29,060
30	Sales tax	0%	$ -	$ -	$ -	$ -
31	Shipping/Freight	1%	$ 860	$ 1,170	$ 12,500	$ 14,530
32	Contingency	10%				$ 172,907

Summary	Extended Budget LCSO	Extended Budget TPD	Extended Budget Consort.	Extended Budget Total
CAD System Software and Installation Services	$ -	$ -	$ 630,000	$ 630,000
CAD System Hardware and Operating Systems	$ 12,000	$ 12,000	$ 255,000	$ 279,000
CAD System Interfaces	$ 55,000	$ 75,000	$ 95,000	$ 225,000
CAD Training	$ 19,000	$ 30,000	$ -	$ 49,000
Acceptance Testing	$ -	$ -	$ 80,000	$ 80,000
Project Management	$ -	$ -	$ 190,000	$ 190,000
Other Project Costs	$ 16,340	$ 22,230	$ 237,500	$ 276,070
Procurement Documents	$ 7,740	$ 10,530	$ 112,500	$ 75,000
Total Purchase Budget Estimate:	**$ 110,080**	**$ 149,760**	**$ 1,600,000**	**$ 1,804,070**

Appendix 6 Florida State 9-1-1 Plan Sections (RE: Call Transfers)

3.3.1 DIRECT DISPATCH

An emergency call received at a 9-1-1 PSAP, which has the responsibility for dispatching emergency vehicles for that particular emergency, is handled with the direct dispatch method. The person answering the call performs as a call taker and conveys the necessary information to a radio dispatcher. For small 9-1-1 PSAPs, the person answering the call may also perform the radio dispatching function.
Calls handled by the direct dispatch method minimize the time required for a citizen to be connected to the call taker. In summary, the public safety agency that has the 9-1-1 PSAP located in its facilities uses the direct dispatch method.

Direct dispatch is the preferred method of handling 9-1-1 calls in order that response time can be minimized to the greatest extent possible.

3.3.2 CALL TRANSFER

3.3.2.1 VOICE

An emergency call received at a 9-1-1 PSAP intended for a public safety agency remotely located from the PSAP is handled with the call transfer method. After the call taker has determined the proper remote agency, the caller is transferred to that agency's call taker. The PSAP call taker remains on the line until the agency answers and until the correctness of the transfer is ascertained. With enhanced systems the transfer switching is often done at the service provider's central office, and the transfer line originates at that central office.

A variation is the seven- or ten-digit call transfer method. This method transfers the caller to the proper public safety agency using a seven- or ten-digit number, as opposed to a transfer over a dedicated line. This method is often used where the expected call volume is not large enough to warrant the cost of a dedicated transfer line. The call transfer may be via speed calling, making the transfer almost as fast as a direct ring down line.

The response time of the call transfer method is greater than the direct dispatch method because the caller must talk to an additional person. For this reason, call transfers must be minimized in the design
of the system.

3.3.2.2 VOICE AND DATA

Agencies receiving transfers of both voice and data are referred to as Secondary PSAPs. These facilities are configured with ANI and ALI screens just like Primary PSAPs and often act as a back up if there is a failure in the Primary PSAP. Agencies receiving voice transfers only are referred to as Transfer Agencies.

3.3.3 CALL RELAY

The call relay method, like call transfer, is used to convey information to a remotely located agency; however, the information rather than the caller is transferred to the remote agency.

The information is relayed by voice using the agency's existing seven-or ten-digit emergency number, hot line or point-to-point radio system, if such capabilities exist. The information can also be relayed

by digital data transmission using an electronic keyboard and/or electronic display. Proper operation of the call relay method requires that explicit call answering protocols be established with the participating agencies to ensure that the essential information is obtained from the caller. This method is suited for use with agencies that do not have a large call volume.

The call relay method is sometimes best if the caller is too emotionally distressed to be transferred.

A wireless 9-1-1 caller may be subject to disconnection of service or other interruptions. Therefore, a 9-1-1 call taker receiving the initial call should document as much information as possible should relay be required or desired.

In this case the 9-1-1 call taker initially receiving a call must obtain as many details as possible about the emergency. In particular, all Telecommunications Device for the Deaf (TDD) calls shall be relayed, rather than transferred, to reduce the chances for confusion with a hearing impaired caller.

The overall response time of a voice-relayed call is longer than other call handling methods. Use of this method should be minimized to the greatest extent possible.

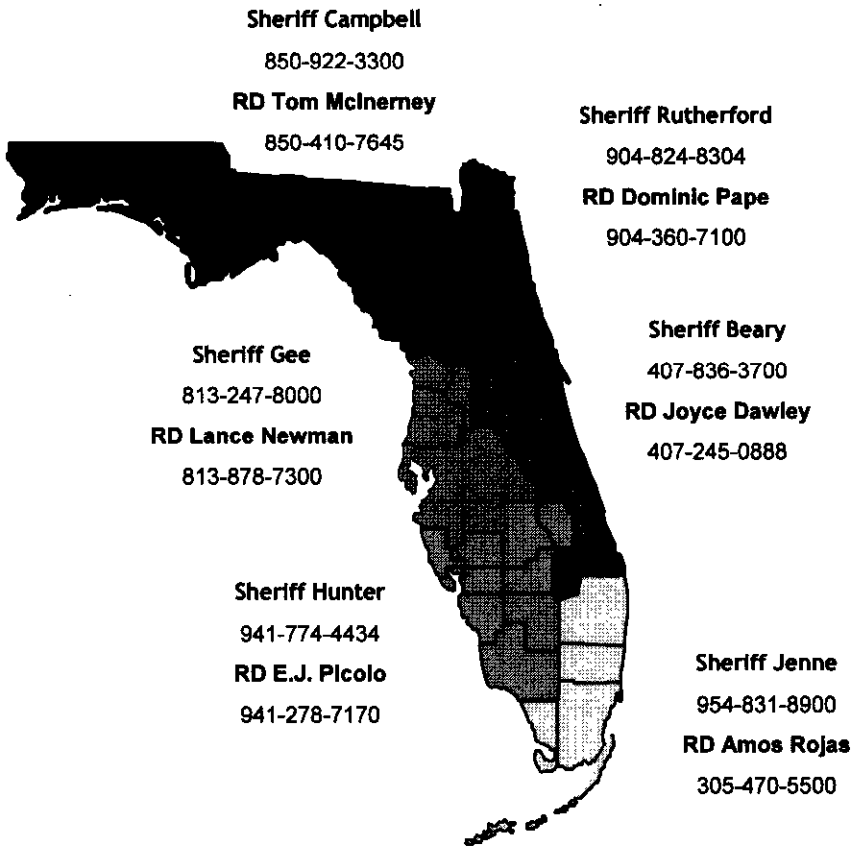
3.3.4 CALL REFERRAL

Non-emergency and administrative calls received by a 9-1-1 PSAP may be handled by the call referral method. The 9-1-1 call taker gives the seven- or ten-digit number or refers the citizen to the telephone
directory. Call referral must never be used for an emergency call. In Florida, as well as nationally, experience has established that not all 9-1-1 calls are true emergencies. Many are administrative or of a non-emergency nature and can be handled by the call referral method.

Based upon the ratio of emergency to non-emergency calls experienced in Florida, it is estimated that approximately 50 percent of all calls received by a PSAP will be handled to completion as true emergencies. The percentage will vary as a function of local conditions in a given county. Those calls defined as non-emergency can be referred to keep the PSAP lines open.

It is recognized that in some areas the treatment of administrative and emergency calls is essentially the same. This tends to be the case in the more rural areas of Florida. This is not a recommended procedure for a 9-1-1 system.

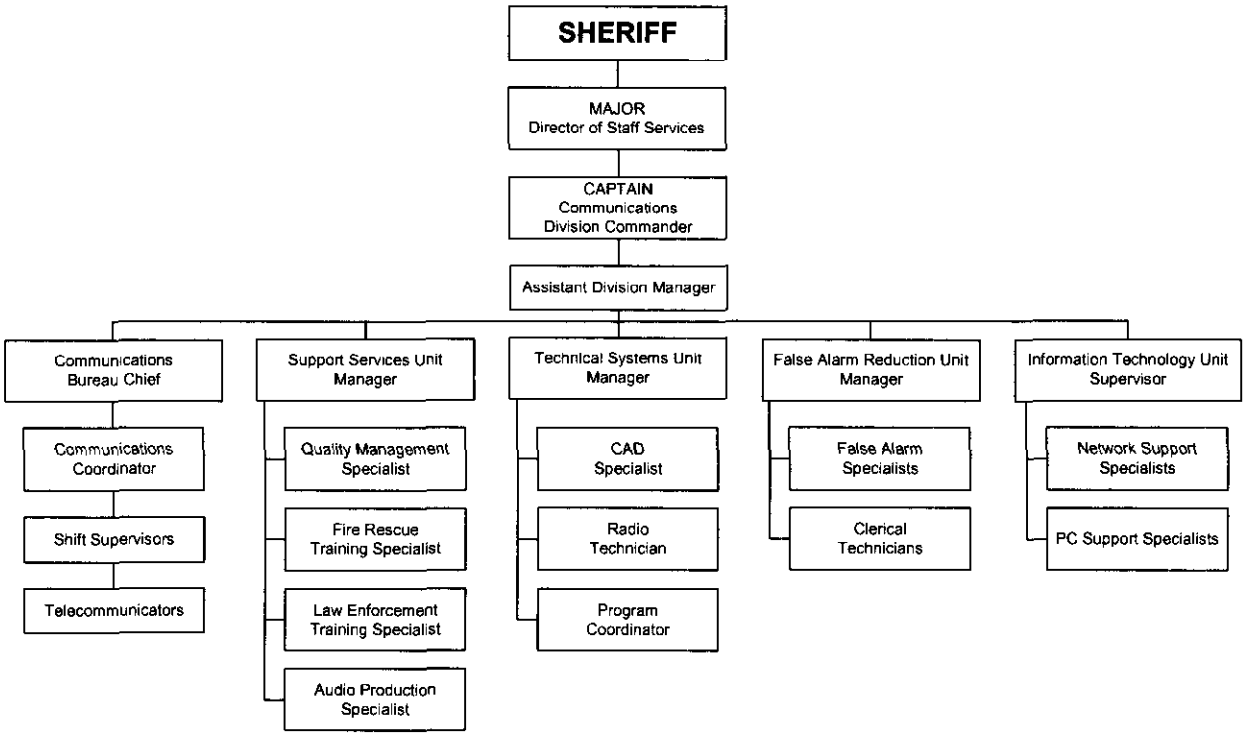
Appendix 7 Florida Regional Domestic Security Task Force Responsibility Diagram



Appendix 8 Organizational Chart – Alachua County Sheriff's Office Communications Division

ALACHUA COUNTY SHERIFF'S OFFICE
COMMUNICATIONS DIVISION

Organizational Chart CCC SOP 1.2.3
03/15/2004



Appendix 9 Organizational Chart - Sarasota County Sheriff's Office Public Safety Communications

SARASOTA COUNTY SHERIFF'S OFFICE
PUBLIC SAFETY COMMUNICATIONS
2005